Manitoba Health

Dental Health

Fluoridated Water Supplies — 1990

Manitoba
Health

1990 ANNUAL OPERATING REPORT

OF

FLUORIDATED WATER SUPPLIES

IN

MANITOBA

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INTRODUCTION

This report is a brief summary of the performance of Manitoba Health/Dental Health's water fluoridation program for 1990.

I. STATUS OF FLUORIDATION IN MANITOBA - 1990

A total of fifty-three (53) water treatment plants provide fluoridated water to approximately seventy-three (73) communities with an estimated total population of over 777,000 people. This represents 72% of Manitoba's total population. Approximately 93% of the population served by a public water system, receive fluoridated water. Note: All population statistics are based on the 1986 census figures. Not included in the statistics above are rural residents who consume water transported from a fluoridated water supply.

All 53 water treatment plants participate in the voluntary monitoring program conducted by Dental Health/Manitoba Health.

Dental Health staff continued to promote water fluoridation at the community level. Promotion included initial contacts in non-fluoridating communities, presentations to community councils (both public and in-camera) and local interest groups.

Dental Health continued to offer financial and technical support to Manitoba communities wishing to install fluoridation systems on a first-time basis. The waterworks operations were evaluated, systems designed and equipment specified. Once the equipment was purchased, assistance in installation, start-up and operation was provided by Dental Health technical staff.

Dental Health continued to provide technical support to all water treatment plant operators in order to ensure an optimum fluoride level was regularly achieved in a safe manner.

PROVINCE OF MANITOBA

TABLE I

MANITOBA HEALTH/DENTAL HEALTH
SUMMARY

COMMUNITIES WITH A FLUORIDATED WATER SUPPLY AS OF DECEMBER 31, 1990

WATER PLANT LOCATION	STATUS	POPULATION 1986 CENSUS	MINISTERIAL APPROVAL	DATES ON LINE	BACK-GROUND LEVEL	TYPE OF CHEMICAL FEED	TEST KIT	AVERAGE [F] p.p.m. 1990	WATER SOURCE	WATER PLANT OWNER
ALTONA	Region	779						1.20		
AUSTIN	Region	1,279		88.12.15		NaF	Ha	1.20	RIVER	MWSB
BALDUR	Village	376	66 09 19	67 11 15	0.22	NaF 3%	Ha	1.17	WELL	MWSB
BIRTLE	Town	850	89 05 04	87 11 07	0.26	NaF 4%	Ha C	1.54	WELL	TOWN
BOISSEVAIN	Town	1,572	56 11 05	57 01 11	0.20	NaF 4%	Ha F	1.24	SIC	TOWN
BRANDON	City	38,708	53 08 11	55 03 08	0.20	Na SiF Dry	Ha	1.20	RIVER	CITY
CARMAN	Town	2,500	65 06 22	65 11 03	0.26	NaF 4%	Ha	1.25	RIVER	TOWN
CRANBERRY PORTAGE	U.V.D.	849	83 03 19	83 12 14	<0.10	NaF 2%	Ha C	1.04	SPRING LAKE	TOWN MWSB
DAUPHIN	Town	8,875	57 08 02	80 05 03	0.14	H_2SiF_6	Ha	1.22	AM	TOWN
DELORAINE	Town	1,134	67 07 28	68 09 24	0.16	NaF 3%	Ha	1.05	SIC	MWSB
ERICKSON	Village	565	72 10 12	73 05 04	0.23	NaF 1.5%	Ha	1.39	WELL	MWSB
FLIN FLON	City	7,243	61.07.01	89.12.15	<0.10	H_2SiF_6	Ha		LAKE	CITY
GILBERT PLAINS	Village	816		89 02 22		NaF	Ha	1.18	WELL	MWSB
GILLAM	L.G.D.	1,909	74 08 14	87 01 03	<0.10	NaF	Ha	0.85	RIVER	LGD
GIMLI	R.M.	600		69 04 18	0.43	NaF 4%	Ha	1.12	WELL	R.M.
GIMLI	Town	1,681	63.08.01	63.12.23	0.45	NaF 4%	Ha	1.08	WELL	MWSB
GLADSTONE	Town	951	71 04 19	76 09 23	0.22	NaF 4%	Ha	1.23	RIVER	TOWN
HAMIOTA	Village	816	70 05 27	70 08 17	0.29	NaF 1%	Ha	1.02	WELL	MWSB
HARTNEY	Town	523	64 01 02	64 12 16	0.20	NaF 1%	Ha	1.11	WELL	TOWN
KILLARNEY	Town	2,318	60 10 12	60 10 25	0.19	NaF 4%	Ha	1.16	LAKE	TOWN
LAC DU BONNET	Village	1,021	89 05 04	85 09	<0.10	NaF	Ha	1.19	WELL	MWSB
LETELLIER	Region	3,921	89 05 04	87 05 13	0.17	H_2SiF_6	Ha	1.26	RIVER	MWSB
MANITOU	Village	856	64 01 21	65 05 13	0.19	NaF 3%	Ha	1.23	SIC	MWSB

NOTES:

The Red River Regional Water Treatment Plant in Letellier, Manitoba serves the following communities: Altona, Dominion City, Gnadenfeld, Gnadenthal, Halbstadt, Letellier, New Bercthal, Rosseau River and Sommerfeld.

The town of Altona receives a blend of water from the Regional Plant in Letellier and the water treatment plant in Neche, North Dakota, U.S.A..

The Village of MacGregor began receiving water from the Austin-MacGregor Regional Treatment Plant in December/1989.

KEY:

1. Status
   - R.M. - Rural Municipality
   - U.V.D. - Unincorporated Village District
   - C.F.B. - Canadian Forces Base

2. Type of Chemical Feed
   - H_2SiF_6 - Hydrofluosilicic Acid
   - NaF - Sodium Fluoride
   - NaSiF - Dry-Sodium Fluoride/ Silicofluoride

3. Test Kit
   - Ha - Hach Spectrophotometer
   - Ha C - Hach DR-100 Colorimeter
   - Ha C/P - Hach Colorimeter/ p" meter
   - Ha F - Hach Filterophotometer
   - SIE - Specific Ion Electrode
   - T - Taylor

4. Water Plant Owner
   - CFB - Canadian Forces Base
   - LGD - Local Government District
   - MWSB - Manitoba Water Services Board
   - R.M. - Rural Municipality
   - RSVE - Reserve
   - VILL - Village

PROVINCE OF MANITOBA

MANITOBA HEALTH/DENTAL HEALTH
SUMMARY

COMMUNITIES WITH A FLUORIDATED WATER SUPPLY AS OF DECEMBER 31, 1990 (continued)

WATER PLANT LOCATION	STATUS	POPULATION 1986 CENSUS	MINISTERIAL APPROVAL	DATES ON LINE	BACK-GROUND LEVEL	TYPE OF CHEMICAL FEED	TEST KIT	AVERAGE (F) p.p.m. 1990	WATER SOURCE	WATER PLANT OWNER
McCREARY	Village	578	69 08 28	69 11 18	0.24	NaF 3%	Ha	1.17	WELL	MWSB
MELITA	Town	1,239	89 05 04	87 02 14	0.18	NaF 4%	Ha	1.22	WELL	TOWN
MINNEDOSA	Town	2,520	60 01 25	86 04	0.28	NaF 4%	Ha F	1.06	WELL	TOWN
MORDEN	Town	5,004	68 09 09	69 11 17	0.32	NaF 4%	Ha C	1.13	LAKE	TOWN
MORRIS	Town	1,613	89 05 04	89 02 27	0.21	NaF	Ha	1.04	RIVER	TOWN
NEEPAWA	Town	3,314	63 06 10	63 07 10	0.24	Na SiF Dry	Ha	1.07	LAKE	TOWN
PILOT MOUND	Village	819	68 10 25	70 12 21	0.21	NaF 3%	Ha	1.25	SIC	MWSB
PINAWA	L.G.D.	2,078	63 11 26	64 01 14	0.08	Na SiF Dry	Ha	1.26	RIVER	LGD
PORTAGE LA PRAIRIE	City	13,198	57 12 20	58 01 13	0.20	NaSiF Dry	SIE	1.14	RIVER	CITY
RESTON	Village	616	67 09 13	68 11 26	0.13	NaF 1.5%	Ha	1.15	WELL	MWSB
RIVERS	Town	1,157	68 06 07	86 10 27	0.18	NaF 4%	Ha	1.04	WELL	TOWN
ROBLIN	Town	1,913	69 06 07	86 10 27	0.26	NaF 4%	Ha	1.01	WELL	TOWN
ROSSBURN	Village	664	89 05 04	77 12 05	0.10	NaF 1%	Ha	1.00	WELL	MWSB
RUSSELL	Town	1,669	65 09 10	67 03 01	0.21	NaF 2%	Ha	1.20	WELL	MWSB
ST. JEAN	Village	571	89 05 04	88.02.01	0.17	NaF 4%	Ha	1.15	RIVER	MWSB
STE. ROSE	Village	1,030	69 11 25	87 10 24	0.12	NaF 4%	Ha	1.23	WELL	MWSB
SANFORD	Region	1,657	-	89 11 21	0.20	H_2SiF_6	Ha		WELL	R.M.
SANDY BAY	Reserve	1,800	N/A	83	0.20	NaF 4%	Ha	0.79	WELL	RSVE
SHILO	C.F.B.	3,200	N/A	69 01 14	0.12	NaF 4%	T	0.93	WELL	CFB
SHOAL LAKE	Village	832	68 08 26	87 03 28	0.27	NaF 4%	Ha	1.19	WELL	VILL
SOURIS	Town	1,751	62 07 11	63 11 05	0.19	NaF 3%	Ha C/P	1.08	RIVER	MWSB
STEINBACH	Town	7,473	59 11 04	60 05 23	0.39	NaF 3%	Ha	1.11	WELL	TOWN
SWAN RIVER	Town	3,946	80 10 07	82 08 08	0.20	NaF 3%	Ha	1.13	WELL	TOWN
THE PAS	Town	6,283	64 07 20	64 07 23	0.25	Na SiF Dry	Ha C/P	1.26	RIVER	TOWN
TREHERNE	Village	762	72 11 10	73 06 11	0.32	NaF 4%	Ha F	1.17	AW	VILL
VIRDEN	Town	3,054	71 01 11	71 04 08	0.44	NaF 4%	Ha C	0.96	WELL	TOWN
WABOWDEN	Village	571		89.06.30	<0.10	NaF	Ha	0.40	LAKE	COM.
WINKLER	Town	5,926	64 01 21	64 06 24	0.26	NaF 3%	Ha	1.13	WELL	MWSB
WINNIPEG	City	615,000	56 07 20	56 12 28	0.10	H_2SiF_6	SIE	0.63	LAKE	CITY
WINNIPEGOSIS	Village	832	89 05 04	88 08 10	0.15	NaF 4%	Ha	1.20	WELL	MWSB
*OTHER		1,148								

NOTES:
The Regional Plant in Sanford also serves the communities of LaSalle and Domain.

*OTHER - The water treatment plant in Neche, North Dakota serves the following communities: Blumenort, Gretna, Kronstall, Neuhorst, and Rosetown.

KEY:

1. Status
   - R.M. - Rural Municipality
   - U.V.D. - Unincorporated Village District
   - C.F.B. - Canadian Forces Base

2. Type of Chemical Feed
   - H_2SiF_6 - Hydrofluosilicic Acid
   - NaF - Sodium Fluoride
   - NaSiF - Dry-Sodium Fluoride/ Silicofluoride

3. Test Kit
   - Ha - Hach Spectrophotometer
   - Ha C - Hach DR-100 Colorimeter
   - Ha C/P - Hach Colorimeter/ p" meter
   - Ha F - Hach Filterophotometer
   - SIE - Specific Ion Electrode
   - T - Taylor

4. Water Plant Owner
   - CFB - Canadian Forces Base
   - LGD - Local Government District
   - MWSB - Manitoba Water Services Board
   - R.M. - Rural Municipality
   - RSVE - Reserve
   - VILL - Village

II. FLUORIDATION GRANT

A. OVERVIEW

1) OBJECTIVES: To have all communal water systems in the Province fluoridated.

2) ELIGIBILITY: Any community with a population of 800 or more that currently does not have an optimal fluoride level in the water supply.

3) DESCRIPTION: If a community is interested in this grant, contact can be made with the Fluoridation Officer, Manitoba Health/Dental Health. The officer will provide information on the grant program, make formal contact with the community and assist in the design, installation and operation of the equipment. Once the system is operational, the Fluoridation Officer will review and authorize payment to the community for the purchase and installation of the equipment. Assistance is provided with ongoing monitoring of the fluoride levels in the water supply.

4) FUNDING: The grant is based on actual initial costs of purchase and installation of equipment as submitted by communities.

5) MINISTERIAL APPROVAL: Approval is issued by the Minister of Health to communities operating fluoridation systems in accordance with the regulations under the Manitoba Public Health Act.

B. RECIPIENTS

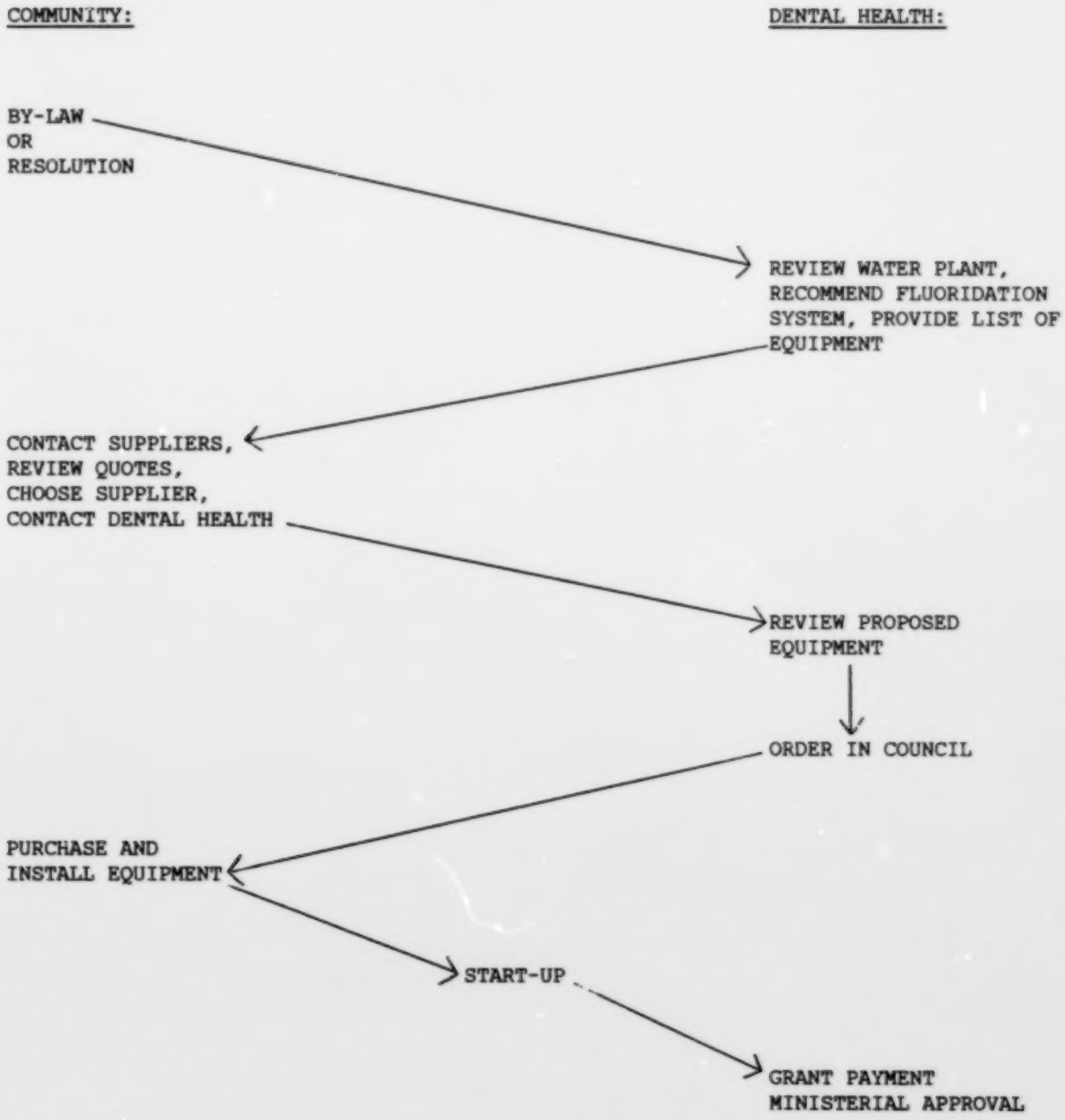
In 1990, the communities of Flin Flon, Sanford and Virden qualified to receive grant monies.

Fig. 1

MANITOBA HEALTH/DENTAL HEALTH

FLUORIDATION GRANT

PROCESS



III. EQUIPMENT

A. OVERVIEW

Water treatment plants are visited on a periodic basis for the purpose of encouraging preventive maintenance of the fluoridation equipment and assisting with the solution of technical problems.

In addition, technical assistance is provided by the Chief Public Health Engineer and the W.M. Ward Technical Services Laboratory staff.

Examples of typical operating problems are:

- obsolete or defective testing equipment
- obsolete or malfunctioning fluoride feed equipment
- equipment breakdown

B. STATUS

Currently in Manitoba, there are four types of fluoridation systems in operation. They are as follows:

- acid feed
- batch mix
- dry feed
- up-flow saturator

In 1990, the following communities converted to an up-flow saturator system:

Baldur, Cranberry Portage, Erickson and Souris

In 1990, the Town of Swan River converted it's system to an acid feed system.

IV. MONITORING PROGRAM

A. OVERVIEW

The purpose of this program is to ensure that the recommended level for fluoride concentration is maintained in Manitoba's drinking water.

Participation in the monitoring program is voluntary. All 53 water treatment plants participate.

1) Sampling Procedure

Samples are collected, tested and recorded on a daily basis by the water treatment plant operator. A 14 day composite sample (approximately one litre) is submitted by the community for analysis. A record of chemical feed data (Fluoride Control Record) is submitted with the sample.

The W.M. Techical Services Laboratory, located in Winnipeg, receives the samples and conducts the analysis. The results are reported to the individual water treatment plant operators and to Dental Health.

Dental Health monitors the levels and makes recommendations accordingly. Periodic on-site visits to the water treatment plants are made to monitor testing procedures and to assist with problems related to the fluoridation system.

2) Supplies

Dental Health outlines the annual sampling schedule and provides Fluoridation Control Record forms to the plants, to be submitted with the samples.

The lab provides sampling bottles, fluoride standard solution, spadns (reagent) and shipping containers to the plants.

B. RESULTS

In 1990, out of a possible 1,378, 1332 bi-weekly samples were received for a submission rate of 97%.

Of the total submitted 1,168 or 88% were within the recommended range for fluoride concentration.

The number of samples found to be above the range were 34 representing 3% of the total.

There were 130 samples found to be below the range representing 9% of all samples submitted.

BI-WEEKLY SAMPLING RESULTS - 1990 - SUMMARY TABLE III

TOWN	NUMBER OF SAMPLES WITHIN LIMITS	NUMBER OF SAMPLES ABOVE LIMITS	NUMBER OF SAMPLES BELOW LIMITS	TOTAL NUMBER OF SAMPLES
ALTONA	21	0	0	24
AUSTIN	24	1	1	26
BALDUR	26	0	0	26
BIRTLE	8	0	16	24
BOISSEVAIN	18	1	5	24
BRANDON	26	0	0	26
CARMAN	24	0	2	26
CRANBERRY PORTAGE	19	0	2	21
DAUPHIN	23	1	2	26
DELORAINE	25	0	0	25
ERICKSON	17	8	0	25
FLIN FLON	23	0	3	26
GILBERT PLAINS	25	1	0	26
GILLAM	19	0	2	21
GIMLI IND. PARK	26	0	0	26
GIMLI (TOWN)	19	5	2	26
GLADSTONE	25	1	0	26
HAMIOTA	23	0	1	24
HARTNEY	25	0	1	26
KILLARNEY	20	0	6	26
LAC DU BONNET	23	1	1	25
LETELLIER	26	0	0	26
MANITOU	26	0	0	26
MCCREARY	26	0	0	26
MELITA	26	0	0	26
MINNEDOSA	22	1	2	25
MORDEN	26	0	0	26
MORRIS	19	0	6	25
NEEPAWA	26	0	0	26
PILOT MOUND	26	0	0	26
PINAWA	24	0	1	25
PORTAGE LA PRAIRIE	26	0	0	26
RESTON	26	0	0	26
RIVERS	7	1	12	20
ROBLIN	24	0	2	26
ROSSBURN	25	0	0	25
RUSSELL	25	0	0	25
ST. JEAN	26	0	0	26
STE. ROSE DU LAC	22	0	4	26
SANDY BAY	9	2	5	16
SANFORD	24	0	2	26
SHILO (C.F.B.)	21	3	2	26
SHOAL LAKE	17	0	9	26
SOURIS	23	1	2	26
STEINBACH	20	0	6	26
SWAN RIVER	25	0	1	26
THE PAS	25	0	0	25
TREHERNE	24	1	1	26
VIRDEN	18	4	1	23
WABOWDEN	17	1	8	26
WINKLER	26	0	0	26
WINNIPEG	4	0	22	26
WINNIPEGOSIS	25	1	0	26
TOTAL	1168	34	130	1332

C. CERTIFICATE OF COMMENDATION
WATER TREATMENT PLANT SUPERVISORS

Dental Health presents Certificates of Commendation annually, to recognize water treatment plant operators that have maintained a high standard of operating efficiency for a fluoridation system. The certificate is signed by both the Minister of Health and the Executive Director of Dental Health.

The selection criteria are as follows:

1) 85% or 22 out of 26 bi-weekly samples must be submitted for the sampling year,

AND

2) 90% of submitted samples must be within the recommended operating range for fluoride concentration.

Based on this criteria, in 1990 thirty-one (31) awards were presented. Of this year's recipients, thirteen (13) require special recognition. These 13 operators attained perfect operating records (100% for both requirements).

TABLE IV

1990
CERTIFICATE OF COMMENDATION
WATER TREATMENT PLANT SUPERVISORS

AS PRESENTED BY

MANITOBA HEALTH/DENTAL HEALTH

* Indicates a perfect operating record

COMMUNITY	RECIPIENT
AUSTIN	MR. DON HOTEL
*BALDUR	MR. RAYMOND LUSSIER
*BRANDON	MR. HERB GERLING & MR. GEORGE JAGO
CARMAN	MR. DENNIS BELL & STAFF
DELORAINE	MR. BILL ARNOLD
GILBERT PLAINS	MR. LLOYD BECKLEY & STAFF
*GIMLI INDUSTRIAL PARK	MR. RICHARD BEZDIETNY
GLADSTONE	MR. BOB RICHARDSON
HAMIOTA	MR. LES KIRK
HARTNEY	MR. MIKE BOBYK & STAFF
LAC DU BONNET	MR. ALLAN SIMCOE & STAFF
*LETELLIER	MR. JACK CRONK
*MANITOU	MR. PERCY LEA
*MCCREARY	MR. IVAN HARPER
*MELITA	MR. ELMER PEDERSON & STAFF
*MORDEN	MR. LES WIELER
*NEEPAWA	MR. GEORGE SQUIRES & STAFF
*PILOT MOUND	MR. GARY ODLUM
PINAWA	MR. RON MCDOWELL
*PORTAGE	MR. DAVE PIRT & STAFF
*RESTON	MR. KEN MOORE
ROBLIN	MR. NICK HOLOPINA
ROSSBURN	MR. DOUG JOINER
RUSSELL	MR. HAROLD SCHRADER
ST. JEAN	MR. HENRY BENJAMIN
SANFORD	MR. KEITH MURPHY
SWAN RIVER	MR. LARRY LEMON & MR. MEL PHILLIPS
THE PAS	MR. RUSS YACHIW & STAFF
TREHERNE	MR. GORDON CLARK
*WINKLER	MR. LOU LOEWEN
WINNIPEGOSIS	MR. RON PASCAL

V. SUPPORT SERVICES

Manitoba Health/Dental Health wishes to acknowledge the support received from other groups and government departments which provided assistance with the performance of the Fluoridation Program:

i. The W.M. Ward Technical Services Laboratory for conducting the regular fluoride analyses and the shipping of reagents, sample bottles and fluoride results to participating communities.

ii. The Manitoba Water Services Board for co-operating in the operation of 19 water treatment plants.

iii. Environmental Health Services, Manitoba Health for engineering consultation and advice with administration, design, installation and troubleshooting in-plant operational malfunctions.

iv. Administrative staff, Waterworks Chairmen and Councillors and especially water treatment plant operators in all communities with water fluoridation equipment. Their friendly co-operation and receptiveness to assistance offered by Dental Health technical staff has resulted in a better service to the residents of the communities participating in the program.

FLUORIDE

CONTROL

DATA

1990

TABLE V

MANITOBA WATER SERVICES BOARD
SUMMARY
FLUORIDATING FACILITIES
PERFORMANCE - 1985 THROUGH 1990

PERCENTAGE OF SAMPLES CONTAINING FLUORIDE WITHIN THE RECOMMENDED RANGE

PLANT	YEAR					
	1985	1986	1987	1988	1989	1990
Altona	40	85	58*	92	81	100
Austin	-	-	-	-	96**	92
Baldur	96	100	80	92	100	100
Cranberry Portage	90	80	100	89	100	90
Deloraine	92	85	89	52	73	100
Erickson	92	83	77	85	85	68
Gilbert Plains					100**	96
Hamiota	88	83	62	80	69	96
Lac du Bonnet	53	91	96	81	100	92
Letellier	-	-	100	100	100	100
Manitou	100	100	100	85	100	100
McCreary	100	100	100	100	100	100
Pilot Mound	88	85	96	100	100	100
Reston	100	100	100	92	100	100
Rossburn	83	67	72	85	50	100
Russell	92	100	100	100	100	100
St. Jean				77	92	100
Winkler	100	100	92	100	100	100
Winnipegosis				100	100	96
OVERALL AVERAGE	87%	90%	88%	89%	92%	96%

*Samples from January to May represents a blend of water including non-fluoridated water from Letellier. Letellier began fluoridating in June, 1987.

**First full year of operation.

NOTE: The plants at Altona, Austin and Winkler receive technical assistance from the Manitoba Water Services Board.

MANITOBA HEALTH/DENTAL HEALTH FLUORIDE MONITORING PROGRAM

TABLE VI

FLUORIDE CONTROL DATA - 1990 - SUMMARY

THE FIGURES IN THIS TABLE REFLECT THE RESULTS OF THE TESTING OF BI-WEEKLY COMPOSITE SAMPLES FOR FLUORIDE CONCENTRATION IN PARTS PER MILLION.

2 WEEK STARTING:	DEC 30	JAN 13	JAN 27	FEB 10	FEB 24	MAR 10	MAR 24	APR 07	APR 21	MAY 05	MAY 19	JUN 02	JUN 16	JUN 30	JUL 14	JUL 28	AUG 11	AUG 25	SEP 08	SEP 22	OCT 06	OCT 20	NOV 03	NOV 17	DEC 01	DEC 15
PERIOD:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ALTONA	1.20	1.21	1.18	1.12	0.97	1.00	1.09	1.17	1.30		1.20		1.19	1.39	1.42	1.38	1.39	1.30	1.35	1.27	1.26	1.25	1.23	1.24	1.25	1.21
AUSTIN	1.10	1.21	1.45	1.30	1.16	1.31	1.33	1.25	1.30	1.35	0.67	1.25	1.25	1.39	1.25	1.25	1.22	1.35	1.35	1.30	1.22	1.35	1.50	1.39	1.45	1.45
BALDUR	1.34	1.16	1.20	1.30	1.16	1.32	1.28	1.25	1.15	1.20	1.20	1.15	1.15	1.20	1.10	1.20	1.15	1.18	1.25	1.14	1.20	1.10	1.16	1.11	1.20	1.18
BIRTLE	0.73	0.74	0.68	0.63	0.65	0.79	0.88	1.11		1.00	1.43	0.90	1.00	1.07	0.90	1.05		0.83	0.68	0.66	0.48	0.34	0.37	0.57	0.88	0.82
BOISSEVAIN	0.64	1.28	1.14	1.04	1.70		0.67	1.00	1.14	0.94	0.83		1.10	1.29	1.35	1.14	1.22	0.95	1.21	1.07	0.95	0.87	0.89	0.93	0.96	1.14
BRANDON	1.10	1.23	1.09	1.15	1.00	1.17	1.23	1.29	1.23	1.30	1.31	1.18	1.22	1.22	1.16	1.10	1.15	1.20	1.20	1.15	1.12	1.10	1.19	1.10	1.10	1.05
CARMAN	1.13	1.16	1.29	1.27	1.14	0.85	0.91	0.75	1.00	0.96	1.07	1.20	1.28	1.18	1.25	1.24	1.12	1.18	1.25	1.15	1.20	1.19	1.18	1.11	1.07	1.15
CRANBERRY PORTAGE	1.05	0.81	0.96	1.10	1.18	1.11	1.17	1.10		0.74		1.29	1.00				1.07	1.14	1.10	1.23	1.25	1.23	1.19	0.95	1.10	1.00
DAUPHIN	1.15	1.18	1.15	1.08	1.18	1.10	1.20	1.16	1.19	1.12	1.15	1.05	1.05	1.04	1.05	1.47	1.33	1.16	1.25	1.24	1.22	1.16	1.15	1.10	0.89	0.88
DELORAINE	1.04	1.12		1.14	1.05	1.13	1.37	1.11	1.18	1.13	1.00	1.00	1.30	1.00	0.95	1.14	1.20	1.20	1.32	1.14	1.35	1.13	1.30	1.19	1.10	1.08
ERICKSON	1.22	1.38	1.78	1.65	1.75		1.70	1.95	1.92	1.90	1.70	1.25	1.19	1.12	1.23	1.35	1.30	1.08	1.07	1.14	1.22	1.23	1.18	1.10	1.00	1.15
FLIN FLON	1.00	1.10	1.11	0.78	0.73	0.84	1.11	1.11	1.04	1.00	0.94	1.20	1.05	1.11	1.10	0.94	1.16	1.10	1.03	1.14	1.10	1.13	1.16	1.19	1.25	1.20
GILBERT PLAINS	1.15	1.14	1.32	1.25	1.28	1.26	1.22	1.10	1.09	1.15	1.12	1.10	1.00	1.22	1.34	1.50	1.10	1.05	1.15	1.09	1.10	1.24	1.25	1.14	1.15	1.15
GILLAM		1.14			1.20	1.21	1.23	1.00	0.50	0.71	1.00	1.00	0.95	1.06	1.10	1.25	1.14	1.05	1.03	1.00			1.04	0.96	1.15	1.00
GIMLI IND. PARK	1.10	1.12	1.10	1.10	1.08	1.17	1.15	1.16	1.23	1.15	1.19	1.15	1.15	1.16	1.20	1.10	1.12	1.16	1.17	1.15	1.17	1.12	1.14	1.20	1.18	1.15
GIMLI (TOWN)	1.90	1.90	1.55	1.36	2.36	1.60	1.00	0.98	1.05	0.98	1.00	0.97	1.07	1.03	1.06	1.05	0.85	0.94	0.90	1.05	0.92	0.85	0.91	1.06	0.97	1.05
GLADSTONE	1.25	1.06	1.04	1.20	1.16	1.19	1.17	1.25	1.30	1.20	1.25	1.20	1.15	1.55	1.27	1.05	1.21	1.20	1.40	1.35	1.22	1.05	1.16	1.29	1.04	1.20
HAMIOTA	1.34	1.21	1.33	1.08	1.16	1.15	1.00	1.33	1.45	1.31	1.25			1.10	1.15	1.25	1.26	1.20	1.19	1.00	0.81	1.05	1.15	1.20	1.16	1.22
HARTNEY	1.00	1.00	0.91	0.80	0.96	1.00	1.06	1.12	1.00	1.00	1.10	1.05	1.00	1.03	1.10	1.10	1.10	1.07	1.05	1.05	1.05	1.00	1.08	0.97	0.90	0.96
KILLARNEY	0.85	1.23	1.09	1.21	0.83	1.25	1.00	1.16	0.91	1.04	0.80	1.05	1.20	0.83	0.65	0.98	0.59	0.92	1.21	1.16	1.17	1.19	1.00	1.09	1.19	1.00
LAC DU BONNET	1.15	1.20		1.75	1.29	1.22	1.28	1.35	1.40	1.18	1.31	1.30	1.19	1.39	1.20	1.25	1.22	1.20	1.35	1.35	1.26	1.24	1.24	1.25	0.80	1.20
LETELLIER	1.30	1.30	1.45	1.30	1.20	1.09	1.34	1.26	1.22	1.25	1.25	1.30	1.27	1.41	1.25	1.30	1.32	1.33	1.32	1.40	1.27	1.13	1.05	1.00	1.05	1.05
MANITOU	1.12	1.25	1.23	1.30	1.32	1.40	1.3?	1.40	1.32	1.25	1.35	1.45	1.35	1.29	1.29	1.16	1.22	1.15	1.25	1.30	1.32	1.19	1.18	1.10	1.20	1.20
MCCREARY	1.07	1.10	1.15	1.24	1.14	1.10	1.07	1.10	1.08	1.00	1.10	1.00	1.05	1.06	1.05	1.14	1.14	1.05	1.03	1.09	1.15	1.19	1.10	1.15	1.19	1.18
MELITA	1.04	1.04	1.10	1.10	1.04	1.05	1.22	1.26	1.19	1.00	1.12	1.10	1.15	1.10	1.23	1.20	1.07	1.03	1.30	1.10	1.10	1.23	1.10	1.05	1.00	1.08
MINNEDOSA	0.98	0.91	1.04	1.05	1.00	1.03	1.14	1.21	1.07	1.00	1.09	0.97	0.98	1.03	0.95	1.55	1.00	1.05	0.86	1.00	1.05	1.12	1.18	0.61		1.36
MORDEN	1.20	1.21	1.16	1.34	1.24	1.26	1.17	1.06	1.04	1.07	1.03	1.00	0.92	1.15	1.00	1.10	0.97	0.94	1.06	1.08	1.12	1.10	1.12	1.20	1.10	1.08
MORRIS	1.22	1.08	1.10	1.00	1.04	1.04	1.00	0.86	0.98		1.03	0.96	1.05	1.16	0.92	1.20	0.88	0.83	0.90	0.87	0.85	0.82	0.93	1.05	1.10	1.15
NEEPAWA	1.00	1.00	1.04	1.17	1.10	1.12	1.07	1.12	1.00	1.05	1.06	0.96	1.15	1.10	1.00	1.05	1.00	1.27	1.15	1.35	1.10	1.10	1.15	1.05	1.04	1.05
PILOT MOUND	1.17	1.21	1.35	1.20	1.24	1.35	1.24	1.20	1.18	1.20	1.25	1.20	1.22	1.39	1.30	1.25	1.25	1.27	1.30	1.16	1.13	1.15	1.12	1.06	1.07	1.10
PINAWA	1.10	1.00	1.09	1.20	1.24	1.25	1.40	1.00	1.18	1.15	1.20	1.35		1.26	1.27	0.55	1.30	1.08	1.25	1.10	1.18	1.19	1.15	1.20	1.05	1.10

*BECAUSE CALCULATED DOSAGE AND OPERATOR'S READINGS WERE NORMAL, A CONTAMINATED SAMPLE IS INDICATED

TABLE VI

MANITOBA HEALTH/DENTAL HEALTH FLUORIDE MONITORING PROGRAM

FLUORIDE CONTROL DATA - 1990 - SUMMARY

THE FIGURES IN THIS TABLE REFLECT THE RESULTS OF THE TESTING OF BI-WEEKLY COMPOSITE SAMPLES FOR FLUORIDE CONCENTRATION IN PARTS PER MILLION.

2 WEEK STARTING:	DEC 30	JAN 13	JAN 27	FEB 10	FEB 24	MAR 10	MAR 24	APR 07	APR 21	MAY 05	MAY 19	JUN 02	JUN 16	JUN 30	JUL 14	JUL 28	AUG 11	AUG 25	SEP 08	SEP 22	OCT 06	OCT 20	NOV 03	NOV 17	DEC 01	DEC 15
PERIOD:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
PORTAGE LA PRAIRIE	1.20	1.21	1.23	1.20	1.40	1.31	1.08	1.15	1.00	1.06	0.95	1.05	1.15	1.25	1.20	1.16	1.25	1.24	1.18	1.30	1.28	1.33	1.30	1.28	1.35	1.30
RESTON	1.15	1.03	1.04	1.05	1.07	1.35	1.17	1.12	0.95	1.10	1.14	1.20	1.15	1.20	1.34	1.20	1.24	1.07	1.25	1.18	1.16	1.30	1.23	1.05	1.04	1.05
RIVERS	0.77	0.69	0.68	0.64	1.03	0.67	0.70	0.48	0.60	0.63	0.70	0.72	1.00	1.19	1.45	1.70	1.08	1.15	1.05					0.43		
ROBLIN	1.10	1.14	0.90	1.17	1.14	0.95	1.06	1.20	0.95	0.94	1.14	1.05	1.10	1.12	0.98	0.75	1.02	1.14	1.10	1.14	1.17	1.13	1.05	1.14	1.12	1.14
ROSSBURN	1.15	1.25	1.25	1.20	1.10	1.22	1.17	1.10	1.15	1.20	1.25	1.05	0.95	0.95	1.06	1.10	0.90	1.08	1.06		1.05	1.19	1.13	1.35	1.17	1.20
RUSSELL	1.25	1.21	1.15	1.25	1.15	1.15	1.16	1.27	1.12	1.19	1.14	1.05	1.15	1.26	1.23	1.10	1.25	1.24	1.40	1.24	1.25	1.13	1.13	1.19		1.18
ST. JEAN	1.10	1.30	1.25	1.00	1.10	1.15	1.30	1.20	1.15	1.21	1.06	1.20	1.25	1.25	1.33	1.21	1.18	1.20	1.15	1.18	1.09	1.23	1.10	1.40	1.19	1.16
STE. ROSE DU LAC	1.20	1.00	1.03	1.09	1.24	1.00	1.10	1.09	0.98	0.53	1.12	1.15	1.25	0.79	1.10	1.14	0.95	1.15	1.35	1.34	0.97	1.00	0.83	0.59	1.19	1.18
SANDY BAY								1.60	0.70	1.10	1.00	1.05	1.10			1.14	1.04	0.85	0.93	0.41	1.47	1.10	0.95	0.61	0.81	
SANFORD	1.04	0.98	0.94	1.03	1.00	0.95	0.93	1.12	0.96	1.12	1.18	1.25	1.28	1.18	1.20	1.16	1.12	0.58	0.18	1.15	1.17	1.23	1.18	1.34	1.18	1.18
SHILO (C.F.B.)	1.30	1.04	1.29	1.00	0.92	1.32	1.70	1.50	1.40	1.47	1.20	1.15	1.15	1.15	1.20	0.66	0.88	1.03	1.00	0.94	1.00	0.95	1.23	0.97	0.97	0.96
SHOAL LAKE	0.95	1.04	1.11	1.08	1.05	1.04	1.14	1.00	1.00	1.00	0.87	0.77	0.78	0.93	0.94	0.85	1.00	0.80	0.90	0.92	0.88	0.84	0.84	0.85	0.99	0.96
SOURIS	0.95	1.04	1.11	1.00	1.00	1.15	1.24	1.03	1.20	1.10	0.94	0.91	0.96	1.07	1.10	1.20	1.50	1.18	0.87	1.15	1.03	0.88	1.00	0.97	0.97	1.00
STEINBACH	1.15	1.00	1.00	0.92	1.07	0.97	0.91	0.91	0.97	1.03	1.03	1.10	1.05	0.88	0.84	0.91	0.88	1.03	1.00	1.08	1.00	1.19	1.04	0.67	0.68	0.72
SWAN RIVER	1.04	1.16	1.30	1.45	1.05	1.11	0.91	0.98	1.05	1.00	1.03	0.93	1.00	1.11	1.15	1.15	1.26	1.34	1.25	0.92	1.43	1.05	1.30	0.89	1.05	1.30
THE PAS	1.20	1.23	1.15	1.25	1.16	1.30	1.28	1.40	1.35	1.25	1.25	1.34	1.40	1.03	1.06	1.30	1.07	1.14	1.06	1.25	1.25	1.30	1.20	1.15		1.20
TREHERNE	0.95	1.63	1.20	1.10	1.15	1.17	1.10	1.27	1.26	1.19	1.30	1.10	1.17	1.22	1.06	1.09	0.87	1.15	1.27	1.15	1.14	1.24	1.23	1.29	1.25	1.25
VIRDEN	1.00	0.80				1.05	1.04	1.06	1.04	1.31	1.36	1.45	1.45	1.50	1.25	1.46	0.91	1.00	1.15	1.09	1.25	1.50	1.57	1.25	1.43	1.45
WABOWDEN	0.53	0.63	1.70	1.14	1.32	1.45	1.37	0.60	1.15	0.87	1.00	1.35	1.15	1.00	0.85	1.10	1.14	0.83	0.90	0.42	0.97	0.97	0.61	0.96	0.92	1.35
WINKLER	1.10	1.16	1.40	1.05	1.14	1.21	1.15	1.07	1.10	1.05	1.25	1.10	1.25	1.25	1.06	1.10	0.96	1.05	1.05	1.05	1.07	1.12	1.13	1.11	1.05	1.24
WINNIPEG	0.10	0.10	0.10	0.10	0.10	0.29	0.72	1.05	1.00	1.05	1.07	0.65	0.55	0.84	0.75	0.43	0.12	0.10	0.10	0.12	0.10	0.11	0.10	0.10	0.10	0.10
WINNIPEGOSIS	1.14	1.13	1.20	1.22	1.26	1.07	1.24	1.15	1.20	1.26	1.41	1.48	1.40	1.30	1.16	1.38	1.39	1.35	1.25	1.27	1.40	1.05	1.10	1.10	0.93	1.00

*BECAUSE CALCULATED DOSAGE AND OPERATOR'S READINGS WERE NORMAL, A CONTAMINATED SAMPLE IS INDICATED

FLUORIDATION CONTROL DATA - KEY

All figures reported are recorded in parts per million.

COMPOSITE (LAB) - Fluoride analysis conducted by the W.M. Ward Technical Services Laboratory on the bi-weekly composite sample submitted by the water plant operator.

COMPOSITE (OPERATOR) - Fluoride reading conducted and reported by the water treatment plant operator on the bi-weekly sample before it is sent to the Technical Services Laboratory.

AVERAGE DAILY - Mathematical average of the 14 daily fluoride tests conducted and reported by the water treatment plant operator.

CALCULATED FEED - The fluoride dosage added to the water supply, calculated from the amount of fluoride chemical added and the amount of water treated.

NATURAL FLUORIDE - The amount of fluoride in the water before treatment.

THEORETICAL DOSAGE - Calculated Dosage plus Natural Content.

NOTE: If "NOT AVAIL" appears in any column, it indicates that data is not available due to one of the following reasons:

- sample not submitted
- sample broken in transit
- information not provided
- sample was contaminated

FLUORIDE CONTROL DATA - 1990

LOCATION - ALTONA (SAMPLING LOCATION ONLY)
CHEMICAL - H2SiF6 - 25%
TEST KIT - Hach Filterphotometer (NECHE)
NATURAL FLUORIDE 0.29
ASSISTED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - W&T A-745
OPERATOR - D. Klassen
TELEPHONE - 324-6633
CALCULATION - N/A

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.20				
2.JAN 13-JAN 26	1.21				
3.JAN 27-FEB 09	1.18				
4.FEB 10-FEB 23	1.12				
5.FEB 24-MAR 09	0.97				
6.MAR 10-MAR 23	1.00				
7.MAR 24-APR 06	1.09				
8.APR 07-APR 20	1.17				
9.APR 21-MAY 04	1.30				
10.MAY 05-MAY 18	NOT AVAIL				
11.MAY 19-JUN 01	1.20				
12.JUN 02-JUN 15	NOT AVAIL				
13.JUN 16-JUN 29	1.19				
14.JUN 30-JUL 13	1.39				
15.JUL 14-JUL 27	1.42				
16.JUL 28-AUG 10	1.38				
17.AUG 11-AUG 24	1.39				
18.AUG 25-SEP 07	1.30				
19.SEP 08-SEP 21	1.35				
20.SEP 22-OCT 05	1.27				
21.OCT 06-OCT 19	1.26				
22.OCT 20-NOV 02	1.25				
23.NOV 03-NOV 16	1.23				
24.NOV 17-NOV 30	1.24				
25.DEC 01-DEC 14	1.25				
26.DEC 15-DEC 28	1.21				
AVERAGE TO DATE	1.23	ERR	ERR	ERR	ERR
RANGE - LOW	0.97	ERR	ERR	ERR	ERR
TO DATE - HIGH	1.42	ERR	ERR	ERR	ERR
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	24				

FLUORIDE CONTROL DATA - 1990

LOCATION - AUSTIN (R.M. of NORTH NORFOLK) FLUORIDATOR -LMI.A741
CHEMICAL - NaF OPERATOR - Don Hotel
TEST KIT - Hach DR-100 TELEPHONE - 637-2101
NATURAL FLUORIDE 0.19 CALCULATION - 17600
ASSISTED BY: MANITOBA WATER SERVICES BOARD

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.20	1.13	0.66	0.85
2.JAN 13-JAN 26	1.21	1.30	1.13	0.41	0.60
3.JAN 27-FEB 09	1.45	1.40	1.39	0.39	0.58
4.FEB 10-FEB 23	1.30	1.40	1.31	0.34	0.53
5.FEB 24-MAR 09	1.16	1.30	1.28	0.92	1.11
6.MAR 10-MAR 23	1.31	1.35	1.34	0.52	0.71
7.MAR 24-APR 06	1.33	1.40	1.34	0.26	0.45
8.APR 07-APR 20	1.25	1.30	1.30	0.46	0.65
9.APR 21-MAY 04	1.30	1.30	1.27	0.30	0.49
10.MAY 05-MAY 18	1.35	1.40	1.32	0.31	0.50
11.MAY 19-JUN 01	0.67	0.80	0.99	0.27	0.46
12.JUN 02-JUN 15	1.25	1.35	1.31	0.41	0.60
13.JUN 16-JUN 29	1.25	1.30	1.30	0.49	0.68
14.JUN 30-JUL 13	1.39	1.35	1.33	0.42	0.61
15.JUL 14-JUL 27	1.25	1.40	1.31	0.42	0.61
16.JUL 28-AUG 10	1.25	1.40	1.36	0.49	0.68
17.AUG 11-AUG 24	1.22	1.30	1.28	0.65	0.84
18.AUG 25-SEP 07	1.35	1.40	1.38	0.39	0.58
19.SEP 08-SEP 21	1.35	1.30	1.25	0.65	0.84
20.SEP 22-OCT 05	1.30	1.40	1.30	0.54	0.73
21.OCT 06-OCT 19	1.22	1.30	1.29	0.63	0.82
22.OCT 20-NOV 02	1.35	1.25	1.23	NOT AVAIL	0.00
23.NOV 03-NOV 16	1.50	1.20	1.19	NOT AVAIL	0.00
24.NOV 17-NOV 30	1.39	1.20	1.20	NOT AVAIL	0.00
25.DEC 01-DEC 14	1.45	1.20	1.21	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.45	1.20	1.17	NOT AVAIL	0.00
AVERAGE TO DATE	1.28	1.30	1.27	0.47	0.66
RANGE - LOW	0.67	0.80	0.99	0.26	0.45
TO DATE - HIGH	1.50	1.40	1.39	0.92	1.11
SAMPLES ABOVE LIMITS	1				
SAMPLES BELOW LIMITS	1				
% OUTSIDE LIMITS TO DATE	7.69%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - BALDUR
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.22
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - LMI A751
OPERATOR - R. Lussier
TELEPHONE - 535-2047
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.34	1.25	1.24	1.71	1.93
2.JAN 13-JAN 26	1.16	1.20	1.23	1.93	2.15
3.JAN 27-FEB 09	1.20	1.25	1.24	1.75	1.97
4.FEB 10-FEB 23	1.30	1.25	1.22	1.65	1.87
5.FEB 24-MAR 09	1.16	1.22	1.23	1.41	1.63
6.MAR 10-MAR 23	1.32	1.23	1.22	1.42	1.64
7.MAR 24-APR 06	1.28	1.23	1.22	1.76	1.98
8.APR 07-APR 20	1.25	1.25	1.23	1.51	1.73
9.APR 21-MAY 04	1.15	1.20	1.21	1.52	1.74
10.MAY 05-MAY 18	1.20	1.20	1.23	1.56	1.78
11.MAY 19-JUN 01	1.20	1.22	1.21	1.45	1.67
12.JUN 02-JUN 15	1.15	1.20	1.21	0.89	1.11
13.JUN 16-JUN 29	1.15	1.15	1.20	0.85	1.07
14.JUN 30-JUL 13	1.20	1.20	1.22	0.89	1.11
15.JUL 14-JUL 27	1.10	1.20	1.19	0.86	1.08
16.JUL 28-AUG 10	1.20	1.21	1.22	0.94	1.16
17.AUG 11-AUG 24	1.15	1.20	1.23	0.94	1.16
18.AUG 25-SEP 07	1.18	1.20	1.22	0.92	1.14
19.SEP 08-SEP 21	1.25	1.20	1.23	0.94	1.16
20.SEP 22-OCT 05	1.14	1.18	1.22	0.94	1.16
21.OCT 06-OCT 19	1.20	1.21	1.23	0.98	1.20
22.OCT 20-NOV 02	1.10	1.20	1.20	0.85	1.07
23.NOV 03-NOV 16	1.16	1.24	1.23	1.12	1.34
24.NOV 17-NOV 30	1.11	1.21	1.22	0.98	1.20
25.DEC 01-DEC 14	1.20	1.20	1.23	1.15	1.37
26.DEC 15-DEC 28	1.18	1.21	1.23	1.05	1.27
AVERAGE TO DATE	1.19	1.21	1.22	1.23	1.45
RANGE - LOW	1.10	1.15	1.19	0.85	1.07
TO DATE - HIGH	1.34	1.25	1.24	1.93	2.15

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - BIRTLE
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.26

FLUORIDATOR -LMI - 741
OPERATOR - Len Bratko
TELEPHONE - 842-3234
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.73	1.05	0.92	0.37	0.63
2.JAN 13-JAN 26	0.74	1.00	1.00	0.38	0.64
3.JAN 27-FEB 09	0.68	1.02	0.96	0.36	0.62
4.FEB 10-FEB 23	0.63	1.08	0.95	0.35	0.61
5.FEB 24-MAR 09	0.65	1.08	1.03	0.38	0.64
6.MAR 10-MAR 23	0.79	1.18	1.07	0.39	0.65
7.MAR 24-APR 06	0.88	1.15	1.04	0.37	0.63
8.APR 07-APR 20	1.11	1.35	1.31	1.35	1.61
9.APR 21-MAY 04	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
10.MAY 05-MAY 18	1.00	1.25	1.20	0.53	0.79
11.MAY 19-JUN 01	1.43	1.40	1.14	0.58	0.84
12.JUN 02-JUN 15	0.90	1.12	1.09	0.35	0.61
13.JUN 16-JUN 29	1.00	1.18	1.15	0.70	0.96
14.JUN 30-JUL 13	1.07	1.28	1.15	0.72	0.98
15.JUL 14-JUL 27	0.90	1.30	1.20	0.52	0.78
16.JUL 28-AUG 10	1.05	1.42	1.14	1.00	1.26
17.AUG 11-AUG 24	NOT AVAIL	1.21	1.28	1.28	1.54
18.AUG 25-SEP 07	0.83	1.20	1.15	0.35	0.61
19.SEP 08-SEP 21	0.68	1.20	1.06	0.36	0.62
20.SEP 22-OCT 05	0.66	1.30	1.34	0.60	0.86
21.OCT 06-OCT 19	0.48	1.35	1.15	0.81	1.07
22.OCT 20-NOV 02	0.34	0.95	0.97	0.38	0.64
23.NOV 03-NOV 16	0.37	0.90	0.81	0.55	0.81
24.NOV 17-NOV 30	0.57	0.90	0.96	0.58	0.84
25.DEC 01-DEC 14	0.88	1.10	1.04	1.36	1.62
26.DEC 15-DEC 28	0.82	0.95	1.19	0.58	0.84
AVERAGE TO DATE	0.80	1.16	1.09	0.61	0.87
RANGE - LOW	0.34	0.90	0.81	0.35	0.61
TO DATE - HIGH	1.43	1.42	1.34	1.36	1.62

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	16
% OUTSIDE LIMITS TO DATE	66.67%
NUMBER OF SAMPLES TO DATE	24

FLUORIDE CONTROL DATA - 1990

LOCATION - BOISSEVAIN
CHEMICAL - NaF 4%
TEST KIT - Hach Filterphotometer
NATURAL FLUORIDE 0.2

FLUORIDATOR -PRECISION
OPERATOR - B. Chinner
TELEPHONE -
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.64	0.80	0.70	0.84	1.04
2.JAN 13-JAN 26	1.28	1.40	1.09	0.85	1.05
3.JAN 27-FEB 09	1.14	1.40	1.24	1.04	1.24
4.FEB 10-FEB 23	1.04	1.15	1.10	0.52	0.72
5.FEB 24-MAR 09	1.70	1.60	1.40	1.67	1.87
6.MAR 10-MAR 23	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
7.MAR 24-APR 06	0.67	0.90	1.02	0.37	0.57
8.APR 07-APR 20	1.00	0.90	1.07	0.58	0.78
9.APR 21-MAY 04	1.14	1.25	1.17	0.98	1.18
10.MAY 05-MAY 18	0.94	1.10	1.24	1.01	1.21
11.MAY 19-JUN 01	0.83	1.30	1.00	1.02	1.22
12.JUN 02-JUN 15	NOT AVAIL	1.05	1.09	1.00	1.20
13.JUN 16-JUN 29	1.10	1.10	0.96	1.30	1.50
14.JUN 30-JUL 13	1.29	1.20	1.22	1.10	1.30
15.JUL 14-JUL 27	1.35	1.20	1.19	1.11	1.31
16.JUL 28-AUG 10	1.14	1.10	1.18	1.07	1.27
17.AUG 11-AUG 24	1.22	1.20	1.18	1.00	1.20
18.AUG 25-SEP 07	0.95	1.00	1.09	0.84	1.04
19.SEP 08-SEP 21	1.21	1.25	1.04	1.23	1.43
20.SEP 22-OCT 05	1.07	1.16	1.13	0.90	1.10
21.OCT 06-OCT 19	0.95	1.10	1.05	0.77	0.97
22.OCT 20-NOV 02	0.87	1.10	1.00	0.90	1.10
23.NOV 03-NOV 16	0.89	1.00	1.07	0.63	0.00
24.NOV 17-NOV 30	0.93	1.10	1.09	0.75	0.95
25.DEC 01-DEC 14	0.96	NOT AVAIL	0.00	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.14	1.10	1.06	0.50	0.70
AVERAGE TO DATE	1.06	1.14	1.10	0.92	1.13
RANGE - LOW	0.64	0.80	0.70	0.37	0.57
TO DATE - HIGH	1.70	1.60	1.40	1.67	1.87

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	5
% OUTSIDE LIMITS TO DATE	25.00%
NUMBER OF SAMPLES TO DATE	24

FLUORIDE CONTROL DATA - 1990

LOCATION - BRANDON
CHEMICAL - Na2 SiF6 (Dry)
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.2

FLUORIDATOR -W&T A-690
OPERATOR - Herb Gerling
TELEPHONE - 728-7424
CALCULATION - 60000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.31	1.18	1.16	1.36
2.JAN 13-JAN 26	1.23	1.26	1.24	1.16	1.36
3.JAN 27-FEB 09	1.09	1.13	1.18	1.05	1.25
4.FEB 10-FEB 23	1.15	1.32	1.18	1.04	1.24
5.FEB 24-MAR 09	1.00	1.22	1.09	0.81	1.01
6.MAR 10-MAR 23	1.17	1.27	1.20	1.09	1.29
7.MAR 24-APR 06	1.23	1.25	1.25	1.12	1.32
8.APR 07-APR 20	1.29	1.25	1.24	1.16	1.36
9.APR 21-MAY 04	1.23	1.32	1.22	1.15	1.35
10.MAY 05-MAY 18	1.30	1.25	1.25	1.01	1.21
11.MAY 19-JUN 01	1.31	1.34	1.23	1.18	1.38
12.JUN 02-JUN 15	1.18	1.35	1.25	1.20	1.40
13.JUN 16-JUN 29	1.22	1.23	1.29	1.17	1.37
14.JUN 30-JUL 13	1.22	1.08	1.23	1.02	1.22
15.JUL 14-JUL 27	1.16	1.26	1.26	1.13	1.33
16.JUL 28-AUG 10	1.10	1.20	1.24	1.10	1.30
17.AUG 11-AUG 24	1.15	1.02	1.20	1.11	1.31
18.AUG 25-SEP 07	1.20	1.26	1.21	1.12	1.32
19.SEP 08-SEP 21	1.20	1.23	1.24	1.13	1.33
20.SEP 22-OCT 05	1.15	1.23	1.21	1.13	1.33
21.OCT 06-OCT 19	1.12	1.25	1.17	1.13	1.33
22.OCT 20-NOV 02	1.10	1.22	1 18	1.13	1.33
23.NOV 03-NOV 16	1.19	NOT AVAIL	0.00	NOT AVAIL	0.00
24.NOV 17-NOV 30	1.10	1.20	1.20	1.11	1.31
25.DEC 01-DEC 14	1.10	1.16	1.18	1.05	1.25
26.DEC 15-DEC 28	1.05	NOT AVAIL	0.00	NOT AVAIL	0.00
AVERAGE TO DATE	1.17	1.23	1.21	1.10	1.30
RANGE - LOW	1.00	1.02	1.09	0.81	1.01
TO DATE - HIGH	1.31	1.35	1.29	1.20	1.40
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - CARMAN
CHEMICAL - NaF 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.21

FLUORIDATOR -CHEMPULSE
OPERATOR - Dennis Bell
TELEPHONE - 745-2481
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.13	1.20	1.25	1.30	1.51
2.JAN 13-JAN 26	1.16	1.35	1.29	1.27	1.48
3.JAN 27-FEB 09	1.29	1.35	1.32	1.30	1.51
4.FEB 10-FEB 23	1.27	1.40	1.33	1.48	1.69
5.FEB 24-MAR 09	1.14	1.30	1.23	1.43	1.64
6.MAR 10-MAR 23	0.85	1.10	1.20	1.65	1.86
7.MAR 24-APR 06	0.91	1.15	1.16	2.30	2.51
8.APR 07-APR 20	0.75	1.10	1.08	1.72	1.93
9.APR 21-MAY 04	1.00	1.20	1.10	1.84	2.05
10.MAY 05-MAY 18	0.96	1.10	1.13	2.32	2.53
11.MAY 19-JUN 01	1.07	1.15	1.14	1.64	1.85
12.JUN 02-JUN 15	1.20	1.20	1.20	1.74	1.95
13.JUN 16-JUN 29	1.28	1.40	1.18	0.22	0.43
14.JUN 30-JUL 13	1.18	1.30	1.25	1.98	2.19
15.JUL 14-JUL 27	1.25	1.30	1.28	1.79	2.00
16.JUL 28-AUG 10	1.24	1.30	1.23	1.60	1.81
17.AUG 11-AUG 24	1.12	1.25	1.25	1.97	2.18
18.AUG 25-SEP 07	1.18	1.20	1.19	1.81	2.02
19.SEP 08-SEP 21	1.25	1.25	1.23	1.54	1.75
20.SEP 22-OCT 05	1.15	1.25	1.19	1.74	1.95
21.OCT 06-OCT 19	1.20	1.20	1.21	2.03	2.24
22.OCT 20-NOV 02	1.19	1.25	1.24	1.71	1.92
23.NOV 03-NOV 16	1.18	1.30	1.25	2.13	2.34
24.NOV 17-NOV 30	1.11	1.05	1.10	1.87	2.08
25.DEC 01-DEC 14	1.07	1.15	1.09	1.66	1.87
26.DEC 15-DEC 28	1.15	1.15	1.11	1.79	2.00
AVERAGE TO DATE	1.13	1.23	1.20	1.69	1.90
RANGE - LOW	0.75	1.05	1.08	0.22	0.43
TO DATE - HIGH	1.29	1.40	1.33	2.32	2.53
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	2				
% OUTSIDE LIMITS TO DATE	7.69%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - CRANBERRY PORTAGE
CHEMICAL - NaF 2%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.1
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-745
OPERATOR - D. Nagy
TELEPHONE - 472-3219
CALCULATION - 8800

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.05	1.10	1.16	1.09	1.19
2.JAN 13-JAN 26	0.81	0.80	0.95	0.93	1.03
3.JAN 27-FEB 09	0.96	1.10	1.06	0.91	1.01
4.FEB 10-FEB 23	1.10	1.20	1.17	0.90	1.00
5.FEB 24-MAR 09	1.18	1.32	1.26	0.77	0.87
6.MAR 10-MAR 23	1.11	1.30	1.28	0.75	0.85
7.MAR 24-APR 06	1.17	1.23	1.22	0.84	0.94
8.APR 07-APR 20	1.10	1.10	1.14	0.73	0.83
9.APR 21-MAY 04	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
10.MAY 05-MAY 18	0.74	0.90	0.84	NOT AVAIL	0.00
11.MAY 19-JUN 01	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
12.JUN 02-JUN 15	1.29	1.32	1.27	0.29	0.39
13.JUN 16-JUN 29	1.00	1.13	1.14	0.46	0.56
14.JUN 30-JUL 13	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
15.JUL 14-JUL 27	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
16.JUL 28-AUG 10	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
17.AUG 11-AUG 24	1.07	0.98	1.11	0.29	0.39
18.AUG 25-SEP 07	1.14	1.11	1.19	0.62	0.72
19.SEP 08-SEP 21	1.10	1.10	1.16	0.70	0.80
20.SEP 22-OCT 05	1.23	1.30	1.27	0.63	0.73
21.OCT 06-OCT 19	1.25	1.12	1.26	0.64	0.74
22.OCT 20-NOV 02	1.23	1.31	1.26	NOT AVAIL	0.00
23.NOV 03-NOV 16	1.19	1.20	1.21	0.64	0.74
24.NOV 17-NOV 30	0.95	1.12	1.04	0.59	0.69
25.DEC 01-DEC 14	1.10	1.16	1.16	0.57	0.67
26.DEC 15-DEC 28	1.00	0.90	1.10	0.55	0.65
AVERAGE TO DATE	1.08	1.13	1.15	0.68	0.78
RANGE - LOW	0.74	0.80	0.84	0.29	0.39
TO DATE - HIGH	1.29	1.32	1.28	1.09	1.19

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	9.52%
NUMBER OF SAMPLES TO DATE	21

FLUORIDE CONTROL DATA - 1990

LOCATION - DAUPHIN
CHEMICAL - H2SiF6 - 25%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.14

FLUORIDATOR -W&T A-690 pac
OPERATOR - E. Mayuk
TELEPHONE - 638-3601
CALCULATION - 18234

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	1.15	1.21	1.12	1.25
2.JAN 13-JAN 26	1.18	1.20	1.19	1.27	1.43
3.JAN 27-FEB 09	1.15	1.15	1.21	1.25	1.40
4.FEB 10-FEB 23	1.08	1.20	1.19	1.16	1.29
5.FEB 24-MAR 09	1.18	1.15	1.20	1.31	1.43
6.MAR 10-MAR 23	1.10	1.20	1.20	1.33	1.45
7.MAR 24-APR 06	1.20	1.25	1.23	1.26	1.40
8.APR 07-APR 20	1.16	1.20	1.21	1.25	1.37
9.APR 21-MAY 04	1.19	1.20	1.22	1.26	1.42
10.MAY 05-MAY 18	1.12	1.25	1.26	1.27	1.43
11.MAY 19-JUN 01	1.15	1.20	1.29	1.28	1.42
12.JUN 02-JUN 15	1.05	1.20	1.21	1.26	1.38
13.JUN 16-JUN 29	1.05	1.20	1.19	1.25	1.38
14.JUN 30-JUL 13	1.04	1.20	1.19	1.35	1.51
15.JUL 14-JUL 27	1.05	1.15	1.16	1.19	1.35
16.JUL 28-AUG 10	1.47	1.30	1.18	1.40	1.56
17.AUG 11-AUG 24	1.33	1.25	1.33	1.28	1.42
18.AUG 25-SEP 07	1.16	1.20	1.19	1.28	1.42
19.SEP 08-SEP 21	1.25	1.25	1.23	1.31	1.48
20.SEP 22-OCT 05	1.24	1.20	1.23	1.29	1.43
21.OCT 06-OCT 19	1.22	1.20	1.19	1.26	1.44
22.OCT 20-NOV 02	1.16	NOT AVAIL	0.00	NOT AVAIL	0.00
23.NOV 03-NOV 16	1.15	NOT AVAIL	0.00	NOT AVAIL	0.00
24.NOV 17-NOV 30	1.10	1.20	1.18	1.16	1.27
25.DEC 01-DEC 14	0.89	NOT AVAIL	0.00	NOT AVAIL	0.00
26.DEC 15-DEC 28	0.88	1.10	1.22	1.05	1.17
AVERAGE TO DATE	1.14	1.20	1.21	1.25	1.40
RANGE - LOW	0.88	1.10	1.16	1.05	1.17
TO DATE - HIGH	1.47	1.30	1.33	1.40	1.56
SAMPLES ABOVE LIMITS	1				
SAMPLES BELOW LIMITS	2				
% OUTSIDE LIMITS TO DATE	11.54%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - DELORAINE
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.16
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-745
OPERATOR - Bill Arnold
TELEPHONE - 747-2062
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.04	1.30	1.34	0.81	0.97
2.JAN 13-JAN 26	1.12	1.30	1.34	1.42	1.58
3.JAN 27-FEB 09	NOT AVAIL	1.20	1.31	1.18	1.34
4.FEB 10-FEB 23	1.14	1.20	1.14	1.48	1.64
5.FEB 24-MAR 09	1.05	1.10	1.19	1.43	1.59
6.MAR 10-MAR 23	1.13	1.20	1.29	1.97	2.13
7.MAR 24-APR 06	1.37	1.30	1.36	1.49	1.65
8.APR 07-APR 20	1.11	1.20	1.25	1.54	1.70
9.APR 21-MAY 04	1.18	1.40	1.33	1.60	1.76
10.MAY 05-MAY 18	1.13	1.40	1.38	1.25	1.41
11.MAY 19-JUN 01	1.00	1.20	1.29	1.16	1.32
12.JUN 02-JUN 15	1.00	1.20	1.28	0.97	1.13
13.JUN 16-JUN 29	1.30	1.40	1.37	1.43	1.59
14.JUN 30-JUL 13	1.00	1.30	1.36	1.20	1.36
15.JUL 14-JUL 27	0.95	1.30	1.22	1.26	1.42
16.JUL 28-AUG 10	1.14	1.30	1.34	1.48	1.64
17.AUG 11-AUG 24	1.20	1.30	1.36	1.27	1.43
18.AUG 25-SEP 07	1.20	1.40	1.37	1.04	1.20
19.SEP 08-SEP 21	1.32	1.40	1.46	1.59	1.75
20.SEP 22-OCT 05	1.14	1.20	1.28	1.63	1.79
21.OCT 06-OCT 19	1.35	1.30	1.39	1.65	1.81
22.OCT 20-NOV 02	1.13	1.15	1.25	1.73	1.89
23.NOV 03-NOV 16	1.30	1.30	1.35	1.76	1.92
24.NOV 17-NOV 30	1.19	1.20	1.30	1.81	1.97
25.DEC 01-DEC 14	1.10	1.15	1.26	1.37	1.53
26.DEC 15-DEC 28	1.08	1.20	1.27	1.79	1.95
AVERAGE TO DATE	1.15	1.27	1.31	1.43	1.59
RANGE - LOW	0.95	1.10	1.14	0.81	0.97
TO DATE - HIGH	1.37	1.40	1.46	1.97	2.13

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - ERICKSON
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.23
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - LMI A751
OPERATOR - K. Podruski
TELEPHONE - 636-2971
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.22	1.12	1.21	1.97	2.20
2.JAN 13-JAN 26	1.38	1.03	1.17	2.05	2.28
3.JAN 27-FEB 09	1.78	1.22	1.22	1.80	2.03
4.FEB 10-FEB 23	1.65	1.23	1.23	1.43	1.66
5.FEB 24-MAR 09	1.75	1.20	1.25	1.59	1.82
6.MAR 10-MAR 23	NOT AVAIL	1.22	1.21	1.69	1.92
7.MAR 24-APR 06	1.70	1.22	1.25	2.69	2.92
8.APR 07-APR 20	1.95	1.31	1.33	2.64	2.87
9.APR 21-MAY 04	1.92	1.26	1.30	2.42	2.65
10.MAY 05-MAY 18	1.90	1.39	1.28	2.68	2.91
11.MAY 19-JUN 01	1.70	1.38	1.33	1.77	2.00
12.JUN 02-JUN 15	1.25	1.28	1.27	1.43	1.66
13.JUN 16-JUN 29	1.19	1.28	1.29	1.41	1.64
14.JUN 30-JUL 13	1.12	1.22	1.25	1.49	1.72
15.JUL 14-JUL 27	1.23	1.29	1.30	1.48	1.71
16.JUL 28-AUG 10	1.35	1.38	1.36	1.60	1.83
17.AUG 11-AUG 24	1.30	1.31	1.34	1.66	1.89
18.AUG 25-SEP 07	1.08	1.12	1.22	1.50	1.73
19.SEP 08-SEP 21	1.07	1.21	1.21	1.65	1.88
20.SEP 22-OCT 05	1.14	1.28	1.25	1.93	2.16
21.OCT 06-OCT 19	1.22	1.21	1.25	1.30	1.53
22.OCT 20-NOV 02	1.23	1.22	1.26	1.62	1.85
23.NOV 03-NOV 16	1.18	1.24	1.24	1.67	1.90
24.NOV 17-NOV 30	1.10	1.20	1.19	1.37	1.60
25.DEC 01-DEC 14	1.00	1.15	1.15	1.27	1.50
26.DEC 15-DEC 28	1.15	1.17	1.20	1.33	1.56
AVERAGE TO DATE	1.38	1.24	1.25	1.75	1.98
RANGE - LOW	1.00	1.03	1.15	1.27	1.50
TO DATE - HIGH	1.95	1.39	1.36	2.69	2.92

SAMPLES ABOVE LIMITS	8
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	32.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - FLIN FLON
CHEMICAL - H2SiF6 - 25%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.1

FLUORIDATOR - Prominent
OPERATOR - K. Komarnicki
TELEPHONE - 687-5020
CALCULATION - 40100

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.00	1.08	1.07	0.98	1.08
2.JAN 13-JAN 26	1.10	1.14	1.18	1.08	1.18
3.JAN 27-FEB 09	1.11	1.11	1.17	0.95	1.05
4.FEB 10-FEB 23	0.78	0.82	0.81	0.65	0.75
5.FEB 24-MAR 09	0.73	0.80	0.78	0.66	0.76
6.MAR 10-MAR 23	0.84	0.79	0.80	0.68	0.78
7.MAR 24-APR 06	1.11	1.09	1.19	0.96	1.06
8.APR 07-APR 20	1.11	1.11	1.12	0.95	1.05
9.APR 21-MAY 04	1.04	1.04	1.06	0.95	1.05
10.MAY 05-MAY 18	1.00	1.02	1.01	0.94	1.04
11.MAY 19-JUN 01	0.94	1.01	0.91	0.93	1.03
12.JUN 02-JUN 15	1.20	1.19	1.15	0.89	0.99
13.JUN 16-JUN 29	1.05	1.02	1.06	0.95	1.05
14.JUN 30-JUL 13	1.11	1.02	1.10	1.03	1.13
15.JUL 14-JUL 27	1.10	1.12	1.13	1.09	1.19
16.JUL 28-AUG 10	0.94	1.12	1.13	1.06	1.16
17.AUG 11-AUG 24	1.16	1.10	1.13	1.07	1.17
18.AUG 25-SEP 07	1.10	1.12	1.09	1.02	1.12
19.SEP 08-SEP 21	1.03	1.12	1.09	1.00	1.10
20.SEP 22-OCT 05	1.14	1.11	1.13	1.00	1.10
21.OCT 06-OCT 19	1.10	1.05	1.11	0.99	1.09
22.OCT 20-NOV 02	1.13	1.14	1.14	1.04	1.14
23.NOV 03-NOV 16	1.16	1.11	1.14	1.02	1.12
24.NOV 17-NOV 30	1.19	1.12	1.15	1.00	1.10
25.DEC 01-DEC 14	1.25	1.20	1.17	1.04	1.14
26.DEC 15-DEC 28	1.20	1.17	1.16	1.02	1.12
AVERAGE TO DATE	1.06	1.07	1.07	0.96	1.06
RANGE - LOW	0.73	0.79	0.78	0.65	0.75
TO DATE - HIGH	1.25	1.20	1.19	1.09	1.19

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	3
% OUTSIDE LIMITS TO DATE	11.54%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - GILBERT PLAINS
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.19
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -LM1 A-741
OPERATOR - L. Beckley
TELEPHONE - 548-2149
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	1.20	1.20	1.08	1.27
2.JAN 13-JAN 26	1.14	1.20	1.20	0.98	1.17
3.JAN 27-FEB 09	1.32	1.20	1.31	1.00	1.19
4.FEB 10-FEB 23	1.25	1.25	1.33	1.03	1.22
5.FEB 24-MAR 09	1.28	1.22	1.34	0.97	1.16
6.MAR 10-MAR 23	1.26	1.21	1.31	0.93	1.12
7.MAR 24-APR 06	1.22	1.28	1.33	0.98	1.17
8.APR 07-APR 20	1.10	1.14	1.22	0.96	1.15
9.APR 21-MAY 04	1.09	1.12	1.24	2.07	2.26
10.MAY 05-MAY 18	1.15	1.19	1.25	1.25	1.44
11.MAY 19-JUN 01	1.12	1.20	1.20	0.67	0.86
12.JUN 02-JUN 15	1.10	1.20	1.19	1.22	1.41
13.JUN 16-JUN 29	1.00	1.10	1.14	0.90	1.09
14.JUN 30-JUL 13	1.22	1.28	1.28	1.16	1.35
15.JUL 14-JUL 27	1.34	1.32	1.32	0.86	1.05
16.JUL 28-AUG 10	1.50	1.45	1.42	1.33	1.52
17.AUG 11-AUG 24	1.10	1.20	1.25	0.60	0.79
18.AUG 25-SEP 07	1.05	1.18	1.16	1.22	1.41
19.SEP 08-SEP 21	1.15	1.30	1.24	0.66	0.85
20.SEP 22-OCT 05	1.09	1.18	1.20	1.26	1.45
21.OCT 06-OCT 19	1.10	1.10	1.14	0.97	1.16
22.OCT 20-NOV 02	1.24	1.25	1.27	1.05	1.24
23.NOV 03-NOV 16	1.25	1.28	1.32	1.12	1.31
24.NOV 17-NOV 30	1.14	1.20	1.26	0.79	0.98
25.DEC 01-DEC 14	1.15	1.25	1.46	0.96	1.15
26.DEC 15-DEC 28	1.15	1.21	1.22	1.27	1.46
AVERAGE TO DATE	1.18	1.22	1.26	1.05	1.24
RANGE - LOW	1.00	1.10	1.14	0.60	0.79
TO DATE - HIGH	1.50	1.45	1.46	2.07	2.26
SAMPLES ABOVE LIMITS	1				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	3.85%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - GILLAM
CHEMICAL - NaF 4%
TEST KIT - Hach Spectophotometer
NATURAL FLUORIDE 0.1

FLUORIDATOR -Liq-Metronics
OPERATOR - R. Gaider
TELEPHONE - 552-2377
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
2.JAN 13-JAN 26	1.14	NOT AVAIL	1.15	0.02	0.12
3.JAN 27-FEB 09	NOT AVAIL	NOT AVAIL	1.14	0.18	0.28
4.FEB 10-FEB 23	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
5.FEB 24-MAR 09	1.20	1.20	1.35	0.16	0.26
6.MAR 10-MAR 23	1.21	1.40	1.36	0.16	0.26
7.MAR 24-APR 06	1.23	1.40	1.39	0.15	0.25
8.APR 07-APR 20	1.00	1.20	1.22	0.11	0.21
9.APR 21-MAY 04	0.50	0.70	0.69	0.05	0.15
10.MAY 05-MAY 18	0.71	1.00	0.96	0.10	0.20
11.MAY 19-JUN 01	1.00	1.50	1.24	0.11	0.21
12.JUN 02-JUN 15	1.00	NOT AVAIL	0.00	NOT AVAIL	0.00
13.JUN 16-JUN 29	0.95	1.30	0.92	0.15	0.25
14.JUN 30-JUL 13	1.06	1.30	1.16	0.21	0.31
15.JUL 14-JUL 27	1.10	1.30	1.22	0.17	0.27
16.JUL 28-AUG 10	1.25	NOT AVAIL	1.29	0.17	0.27
17.AUG 11-AUG 24	1.14	1.30	1.19	0.18	0.28
18.AUG 25-SEP 07	1.05	1.20	1.18	0.23	0.33
19.SEP 08-SEP 21	1.03	1.40	1.25	0.22	0.32
20.SEP 22-OCT 05	1.00	1.40	1.03	0.21	0.31
21.OCT 06-OCT 19	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
22.OCT 20-NOV 02	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
23.NOV 03-NOV 16	1.04	1.40	1.16	NOT AVAIL	0.00
24.NOV 17-NOV 30	0.96	1.20	1.08	0.08	0.18
25.DEC 01-DEC 14	1.15	1.30	1.18	0.06	0.16
26.DEC 15-DEC 28	1.00	1.20	1.17	NOT AVAIL	0.00
AVERAGE TO DATE	1.03	1.26	1.16	0.14	0.24
RANGE - LOW	0.50	0.70	0.69	0.02	0.12
TO DATE - HIGH	1.25	1.50	1.39	0.23	0.33

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	9.52%
NUMBER OF SAMPLES TO DATE	21

FLUORIDE CONTROL DATA - 1990

LOCATION - GIMLI INDUSTRIAL PARK (R.M. of GIMLI)
CHEMICAL - NaF 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.43

FLUORIDATOR -W&T A-747 Sat
OPERATOR - R. Bezdietny
TELEPHONE - 642-8420
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.02	1.12	0.70	1.13
2.JAN 13-JAN 26	1.12	1.17	1.13	0.67	1.10
3.JAN 27-FEB 09	1.10	1.11	1.15	0.67	1.10
4.FEB 10-FEB 23	1.10	1.12	1.15	0.69	1.12
5.FEB 24-MAR 09	1.08	1.10	1.15	0.64	1.07
6.MAR 10-MAR 23	1.17	1.12	1.16	0.70	1.13
7.MAR 24-APR 06	1.15	1.15	1.17	0.76	1.19
8.APR 07-APR 20	1.16	1.09	1.14	0.64	1.07
9.APR 21-MAY 04	1.23	1.08	1.15	0.97	1.40
10.MAY 05-MAY 18	1.15	1.18	1.16	0.73	1.16
11.MAY 19-JUN 01	1.19	1.18	1.16	0.62	1.05
12.JUN 02-JUN 15	1.15	1.12	1.15	0.64	1.07
13.JUN 16-JUN 29	1.15	1.19	1.18	0.57	1.00
14.JUN 30-JUL 13	1.16	1.12	1.16	0.65	1.08
15.JUL 14-JUL 27	1.20	1.18	1.15	0.60	1.03
16.JUL 28-AUG 10	1.10	1.18	1.17	0.63	1.06
17.AUG 11-AUG 24	1.12	1.16	1.17	0.63	1.06
18.AUG 25-SEP 07	1.16	1.16	1.17	0.67	1.10
19.SEP 08-SEP 21	1.17	1.14	1.16	0.68	1.11
20.SEP 22-OCT 05	1.15	1.17	1.15	0.65	1.08
21.OCT 06-OCT 19	1.17	1.16	1.18	0.65	1.08
22.OCT 20-NOV 02	1.12	1.14	1.16	0.65	1.08
23.NOV 03-NOV 16	1.14	1.18	1.17	0.75	1.18
24.NOV 17-NOV 30	1.20	1.18	1.18	0.70	1.13
25.DEC 01-DEC 14	1.18	1.14	1.17	0.66	1.09
26.DEC 15-DEC 28	1.15	1.18	1.16	0.68	1.11
AVERAGE TO DATE	1.15	1.14	1.16	0.68	1.11
RANGE - LOW	1.08	1.02	1.12	0.57	1.00
TO DATE - HIGH	1.23	1.19	1.18	0.97	1.40
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - GIMLI (TOWN)
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.45

FLUORIDATOR -CHEMPULSE
OPERATOR - B.Gudbjartson
TELEPHONE - 642-7443
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.90	0.80	0.95	1.63	2.08
2.JAN 13-JAN 26	1.90	1.00	0.98	NOT AVAIL	0.00
3.JAN 27-FEB 09	1.55	1.50	1.30	1.76	2.21
4.FEB 10-FEB 23	1.36	1.20	1.22	0.41	0.86
5.FEB 24-MAR 09	2.36	1.07	1.07	0.28	0.73
6.MAR 10-MAR 23	1.60	1.04	1.01	0.45	0.90
7.MAR 24-APR 06	1.00	1.00	1.01	0.34	0.79
8.APR 07-APR 20	0.98	1.02	1.02	0.81	1.26
9.APR 21-MAY 04	1.05	1.01	0.87	0.46	0.91
10.MAY 05-MAY 18	0.98	1.01	1.01	0.45	0.90
11.MAY 19-JUN 01	1.00	1.00	1.01	1.49	1.94
12.JUN 02-JUN 15	0.97	1.01	1.01	0.44	0.89
13.JUN 16-JUN 29	1.07	1.01	1.01	0.74	1.19
14.JUN 30-JUL 13	1.03	1.01	1.01	0.40	0.85
15.JUL 14-JUL 27	1.06	1.01	1.01	0.65	1.10
16.JUL 28-AUG 10	1.05	1.01	1.02	0.59	1.04
17.AUG 11-AUG 24	0.85	NOT AVAIL	0.00	NOT AVAIL	0.00
18.AUG 25-SEP 07	0.94	1.02	1.02	0.66	1.11
19.SEP 08-SEP 21	0.90	1.01	1.01	0.56	1.01
20.SEP 22-OCT 05	1.05	1.00	1.01	0.91	1.36
21.OCT 06-OCT 19	0.92	1.01	1.01	0.60	1.05
22.OCT 20-NOV 02	0.85	1.01	1.01	0.59	1.04
23.NOV 03-NOV 16	0.91	1.00	1.00	0.34	0.79
24.NOV 17-NOV 30	1.06	1.01	1.00	0.06	0.51
25.DEC 01-DEC 14	0.97	1.10	1.06	0.06	0.51
26.DEC 15-DEC 28	1.05	1.02	1.01	0.07	0.52
AVERAGE TO DATE	1.17	1.04	1.03	0.61	1.06
RANGE - LOW	0.85	0.80	0.87	0.06	0.51
TO DATE - HIGH	2.36	1.50	1.30	1.76	2.21

SAMPLES ABOVE LIMITS	5
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	26.92%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - GLADSTONE
CHEMICAL - NaF 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.22

FLUORIDATOR -W&T A-745
OPERATOR - B. Richardson
TELEPHONE - 385-2017
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.25	1.25	1.23	0.48	0.70
2.JAN 13-JAN 26	1.06	1.22	1.20	0.48	0.70
3.JAN 27-FEB 09	1.04	1.31	1.16	0.52	0.74
4.FEB 10-FEB 23	1.20	1.23	1.15	0.71	0.93
5.FEB 24-MAR 09	1.16	1.26	1.16	0.40	0.62
6.MAR 10-MAR 23	1.19	1.20	1.16	0.83	1.05
7.MAR 24-APR 06	1.17	1.22	1.18	0.57	0.79
8.APR 07-APR 20	1.25	1.22	1.18	0.61	0.83
9.APR 21-MAY 04	1.30	1.25	1.19	0.66	0.88
10.MAY 05-MAY 18	1.20	1.25	1.18	1.17	1.39
11.MAY 19-JUN 01	1.25	1.25	1.15	0.63	0.85
12.JUN 02-JUN 15	1.20	1.22	1.18	0.98	1.20
13.JUN 16-JUN 29	1.15	1.19	1.18	0.49	0.71
14.JUN 30-JUL 13	1.55	1.12	1.16	1.05	1.27
15.JUL 14-JUL 27	1.27	1.25	1.19	0.38	0.60
16.JUL 28-AUG 10	1.05	1.16	1.20	0.79	1.01
17.AUG 11-AUG 24	1.21	1.21	1.17	0.73	0.95
18.AUG 25-SEP 07	1.20	1.25	1.21	1.14	1.36
19.SEP 08-SEP 21	1.40	1.21	1.28	0.38	0.60
20.SEP 22-OCT 05	1.35	1.30	1.20	1.08	1.30
21.OCT 06-OCT 19	1.22	1.40	1.15	1.00	1.22
22.OCT 20-NOV 02	1.05	1.20	1.04	1.10	1.32
23.NOV 03-NOV 16	1.16	1.25	0.00	0.81	1.03
24.NOV 17-NOV 30	1.29	NOT AVAIL	1.07	0.93	1.15
25.DEC 01-DEC 14	1.04	1.10	1.01	0.81	1.03
26.DEC 15-DEC 28	1.20	1.25	1.10	0.93	1.15
AVERAGE TO DATE	1.21	1.23	1.16	0.76	0.98
RANGE - LOW	1.04	1.10	1.01	0.38	0.60
TO DATE - HIGH	1.55	1.40	1.28	1.17	1.39
SAMPLES ABOVE LIMITS	1				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	3.85%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - HAMIOTA
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.29
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - LMI A751
OPERATOR - Les Kirk
TELEPHONE - 764-2496
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.34	1.25	1.27	3.33	3.62
2.JAN 13-JAN 26	1.21	1.32	1.37	3.64	3.93
3.JAN 27-FEB 09	1.33	1.30	1.32	4.00	4.29
4.FEB 10-FEB 23	1.08	1.30	1.25	3.65	3.94
5.FEB 24-MAR 09	1.16	1.30	1.26	3.43	3.72
6.MAR 10-MAR 23	1.15	1.30	1.26	3.79	4.08
7.MAR 24-APR 06	1.00	1.20	1.22	3.75	4.04
8.APR 07-APR 20	1.33	1.30	1.33	3.66	3.95
9.APR 21-MAY 04	1.45	1.25	1.33	NOT AVAIL	0.00
10.MAY 05-MAY 18	1.31	1.40	1.27	0.86	1.15
11.MAY 19-JUN 01	1.25	1.40	1.34	0.87	1.16
12.JUN 02-JUN 15	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
13.JUN 16-JUN 29	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
14.JUN 30-JUL 13	1.10	1.35	1.17	0.95	1.24
15.JUL 14-JUL 27	1.15	1.25	1.14	0.86	1.15
16.JUL 28-AUG 10	1.25	1.30	1.13	0.88	1.17
17.AUG 11-AUG 24	1.26	1.25	1.07	0.87	1.16
18.AUG 25-SEP 07	1.20	1.20	1.18	0.89	1.18
19.SEP 08-SEP 21	1.19	1.20	1.16	0.85	1.14
20.SEP 22-OCT 05	1.00	1.15	1.04	0.87	1.16
21.OCT 06-OCT 19	0.81	1.10	1.07	NOT AVAIL	0.00
22.OCT 20-NOV 02	1.05	1.20	1.15	0.88	1.17
23.NOV 03-NOV 16	1.15	1.45	1.30	0.85	1.14
24.NOV 17-NOV 30	1.20	1.10	1.28	0.87	1.16
25.DEC 01-DEC 14	1.16	1.20	1.24	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.22	1.35	1.33	0.86	1.15
AVERAGE TO DATE	1.18	1.27	1.23	1.93	2.22
RANGE - LOW	0.81	1.10	1.04	0.85	1.14
TO DATE - HIGH	1.45	1.45	1.37	4.00	4.29

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	1
% OUTSIDE LIMITS TO DATE	4.17%
NUMBER OF SAMPLES TO DATE	24

FLUORIDE CONTROL DATA - 1990

LOCATION - HARTNEY
CHEMICAL - NaF 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.2

FLUORIDATOR -LM1 A-741
OPERATOR - Mike Bobyk
TELEPHONE - 858-2429
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.00	1.10	1.09	1.14	1.34
2.JAN 13-JAN 26	1.00	1.10	1.12	1.11	1.31
3.JAN 27-FEB 09	0.91	1.10	1.07	1.19	1.39
4.FEB 10-FEB 23	0.80	1.00	1.00	0.96	1.16
5.FEB 24-MAR 09	0.96	1.00	1.06	1.83	2.03
6.MAR 10-MAR 23	1.00	1.10	1.08	1.75	1.95
7.MAR 24-APR 06	1.06	1.10	1.10	1.80	2.00
8.APR 07-APR 20	1.12	1.15	1.13	1.18	1.38
9.APR 21-MAY 04	1.00	1.05	1.09	1.51	1.71
10.MAY 05-MAY 18	1.00	1.05	1.06	1.08	1.28
11.MAY 19-JUN 01	1.10	1.10	1.05	1.84	2.04
12.JUN 02-JUN 15	1.05	1.10	1.07	1.83	2.03
13.JUN 16-JUN 29	1.00	1.05	1.06	1.57	1.77
14.JUN 30-JUL 13	1.03	1.05	1.03	1.43	1.63
15.JUL 14-JUL 27	1.10	1.05	1.11	NOT AVAIL	0.20
16.JUL 28-AUG 10	1.10	1.05	1.08	1.16	1.36
17.AUG 11-AUG 24	1.10	1.10	1.06	2.03	2.23
18.AUG 25-SEP 07	1.07	1.05	1.06	1.50	1.70
19.SEP 08-SEP 21	1.05	1.05	1.06	1.50	1.70
20.SEP 22-OCT 05	1.05	1.05	1.05	2.29	2.49
21.OCT 06-OCT 19	1.05	1.10	1.08	1.71	1.91
22.OCT 20-NOV 02	1.00	1.05	1.05	1.11	1.31
23.NOV 03-NOV 16	1.08	1.10	1.11	1.05	1.25
24.NOV 17-NOV 30	0.97	1.10	1.09	1.51	1.71
25.DEC 01-DEC 14	0.90	1.05	1.04	0.99	1.19
26.DEC 15-DEC 28	0.96	1.05	1.06	1.05	1.25
AVERAGE TO DATE	1.02	1.07	1.07	1.44	1.59
RANGE - LOW TO DATE - HIGH	0.80 / 1.12	1.00 / 1.15	1.00 / 1.13	0.96 / 2.29	0.20 / 2.49

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	1
% OUTSIDE LIMITS TO DATE	3.85%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - KILLARNEY
CHEMICAL - NaF 4%
TEST KIT - Hach Spectophotometer
NATURAL FLUORIDE 0.19

FLUORIDATOR - W&T
OPERATOR - Carl Parker
TELEPHONE - 522-8944
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.85	0.90	1.12	0.92	1.11
2.JAN 13-JAN 26	1.23	1.30	1.19	1.07	1.26
3.JAN 27-FEB 09	1.09	1.20	1.18	1.13	1.32
4.FEB 10-FEB 23	1.21	1.30	1.16	1.17	1.36
5.FEB 24-MAR 09	0.83	1.50	1.06	1.14	1.33
6.MAR 10-MAR 23	1.25	1.30	1.21	1.25	1.44
7.MAR 24-APR 06	1.00	1.20	1.08	1.23	1.42
8.APR 07-APR 20	1.16	1.35	1.18	1.25	1.44
9.APR 21-MAY 04	0.91	1.00	1.09	1.04	1.23
10.MAY 05-MAY 18	1.04	1.20	1.16	1.44	1.63
11.MAY 19-JUN 01	0.80	1.10	1.07	1.05	1.24
12.JUN 02-JUN 15	1.05	1.10	1.02	1.25	1.44
13.JUN 16-JUN 29	1.20	1.50	1.12	1.19	1.38
14.JUN 30-JUL 13	0.83	1.05	1.10	1.08	1.27
15.JUL 14-JUL 27	0.65	0.95	0.99	1.25	1.44
16.JUL 28-AUG 10	0.98	1.20	1.15	1.32	1.51
17.AUG 11-AUG 24	0.59	NOT AVAIL	1.21	1.57	1.76
18.AUG 25-SEP 07	0.92	NOT AVAIL	0.00	1.17	1.36
19.SEP 08-SEP 21	1.21	NOT AVAIL	0.00	1.73	1.92
20.SEP 22-OCT 05	1.16	2.00	1.14	1.58	1.77
21.OCT 06-OCT 19	1.17	1.30	1.17	1.58	1.77
22.OCT 20-NOV 02	1.19	1.20	1.13	1.48	1.67
23.NOV 03-NOV 16	1.00	1.05	1.03	0.99	1.18
24.NOV 17-NOV 30	1.09	1.01	1.11	1.48	1.67
25.DEC 01-DEC 14	1.19	1.15	1.18	1.36	1.55
26.DEC 15-DEC 28	1.00	0.85	1.17	1.13	1.32
AVERAGE TO DATE	1.02	1.20	1.13	1.26	1.45
RANGE - LOW	0.59	0.85	0.99	0.92	1.11
TO DATE - HIGH	1.25	2.00	1.21	1.73	1.92

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	6
% OUTSIDE LIMITS TO DATE	23.08%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - LAC DU BONNET
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.10
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - A-745
OPERATOR - Al Simcoe
TELEPHONE - 345-8766
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	1.11	1.07	1.37	1.47
2.JAN 13-JAN 26	1.20	1.20	1.07	1.21	1.31
3.JAN 27-FEB 09	NOT AVAIL	1.25	1.10	1.52	1.62
4.FEB 10-FEB 23	1.75	1.25	1.18	1.48	1.58
5.FEB 24-MAR 09	1.29	1.25	1.14	1.44	1.54
6.MAR 10-MAR 23	1.22	1.26	1.15	1.40	1.50
7.MAR 24-APR 06	1.28	1.26	1.14	1.51	1.61
8.APR 07-APR 20	1.35	1.28	1.14	1.39	1.49
9.APR 21-MAY 04	1.40	1.29	1.19	1.36	1.46
10.MAY 05-MAY 18	1.18	1.27	1.13	1.46	1.56
11.MAY 19-JUN 01	1.31	1.29	1.17	1.37	1.47
12.JUN 02-JUN 15	1.30	1.21	1.20	1.35	1.45
13.JUN 16-JUN 29	1.19	1.24	1.14	1.38	1.48
14.JUN 30-JUL 13	1.39	1.29	1.19	1.22	1.32
15.JUL 14-JUL 27	1.20	1.00	1.19	1.28	1.38
16.JUL 28-AUG 10	1.25	1.10	1.14	1.17	1.27
17.AUG 11-AUG 24	1.22	1.18	1.16	1.13	1.23
18.AUG 25-SEP 07	1.20	1.12	1.14	1.29	1.39
19.SEP 08-SEP 21	1.35	1.26	1.20	1.37	1.47
20.SEP 22-OCT 05	1.35	1.22	1.13	1.41	1.51
21.OCT 06-OCT 19	1.26	1.14	1.13	1.33	1.43
22.OCT 20-NOV 02	1.24	1.20	1.16	1.34	1.44
23.NOV 03-NOV 16	1.24	1.23	1.07	1.17	1.27
24.NOV 17-NOV 30	1.25	1.22	1.14	1.40	1.50
25.DEC 01-DEC 14	0.80	0.65	0.53	1.05	1.15
26.DEC 15-DEC 28	1.20	1.20	1.09	1.40	1.50
AVERAGE TO DATE	1.26	1.19	1.12	1.34	1.44
RANGE - LOW	0.80	0.65	0.53	1.05	1.15
TO DATE - HIGH	1.75	1.29	1.20	1.52	1.62
SAMPLES ABOVE LIMITS	1				
SAMPLES BELOW LIMITS	1				
% OUTSIDE LIMITS TO DATE	8.00%				
NUMBER OF SAMPLES TO DATE	25				

FLUORIDE CONTROL DATA - 1990

LOCATION - LETELLIER (RED RIVER REGIONAL) FLUORIDATOR -LM1
CHEMICAL - H2SiF6 - 25% OPERATOR - Jack Cronk
TEST KIT - Hach DR-3 TELEPHONE - 737-2265
NATURAL FLUORIDE 0.17 CALCULATION - 192000
OPERATED BY: MANITOBA WATER SERVICES BOARD

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.30	1.30	1.28	1.10	1.27
2.JAN 13-JAN 26	1.30	1.25	1.21	1.04	1.21
3.JAN 27-FEB 09	1.45	1.34	1.36	1.17	1.34
4.FEB 10-FEB 23	1.30	1.32	1.32	1.15	1.32
5.FEB 24-MAR 09	1.20	1.21	1.22	0.95	1.12
6.MAR 10-MAR 23	1.09	1.10	1.11	0.89	1.06
7.MAR 24-APR 06	1.34	1.29	1.30	1.13	1.30
8.APR 07-APR 20	1.26	1.28	1.28	1.16	1.33
9.APR 21-MAY 04	1.22	1.27	1.28	1.12	1.29
10.MAY 05-MAY 18	1.25	1.26	1.31	1.13	1.30
11.MAY 19-JUN 01	1.25	1.22	1.29	1.15	1.32
12.JUN 02-JUN 15	1.30	NOT AVAIL	1.30	1.03	1.20
13.JUN 16-JUN 29	1.27	1.30	1.29	1.03	1.20
14.JUN 30-JUL 13	1.41	1.25	1.29	0.94	1.11
15.JUL 14-JUL 27	1.25	1.25	1.26	NOT AVAIL	0.00
16.JUL 28-AUG 10	1.30	1.39	1.32	1.13	1.30
17.AUG 11-AUG 24	1.32	1.27	1.29	1.20	1.37
18.AUG 25-SEP 07	1.33	1.25	1.30	1.07	1.24
19.SEP 08-SEP 21	1.32	1.31	1.29	1.12	1.29
20.SEP 22-OCT 05	1.40	1.30	1.34	1.12	1.29
21.OCT 06-OCT 19	1.27	1.28	1.30	1.08	1.25
22.OCT 20-NOV 02	1.13	1.16	1.19	0.97	1.14
23.NOV 03-NOV 16	1.05	1.16	1.20	0.89	1.06
24.NOV 17-NOV 30	1.00	1.05	1.13	0.82	0.99
25.DEC 01-DEC 14	1.05	1.11	1.14	0.82	0.99
26.DEC 15-DEC 28	1.05	1.15	1.14	0.64	0.81
AVERAGE TO DATE	1.25	1.24	1.26	1.03	1.20
RANGE - LOW	1.00	1.05	1.11	0.64	0.81
TO DATE - HIGH	1.45	1.39	1.36	1.20	1.37
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - MANITOU
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.19
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-745
OPERATOR - Percy N. Lea
TELEPHONE - 242-2885
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.12	1.12	1.22	0.96	1.15
2.JAN 13-JAN 26	1.25	1.26	1.26	1.09	1.28
3.JAN 27-FEB 09	1.23	1.20	1.23	0.92	1.11
4.FEB 10-FEB 23	1.30	1.29	1.27	0.95	1.14
5.FEB 24-MAR 09	1.32	1.28	1.26	1.18	1.37
6.MAR 10-MAR 23	1.40	1.25	1.28	1.02	1.21
7.MAR 24-APR 06	1.33	1.28	1.29	1.05	1.24
8.APR 07-APR 20	1.40	1.24	1.30	1.04	1.23
9.APR 21-MAY 04	1.32	1.34	1.26	1.17	1.36
10.MAY 05-MAY 18	1.25	1.26	1.26	0.94	1.13
11.MAY 19-JUN 01	1.35	1.31	1.29	1.25	1.44
12.JUN 02-JUN 15	1.45	1.28	1.30	NOT AVAIL	0.00
13.JUN 16-JUN 29	1.35	1.37	1.29	1.22	1.41
14.JUN 30-JUL 13	1.29	1.28	1.29	1.07	1.26
15.JUL 14-JUL 27	1.29	1.30	1.29	1.13	1.32
16.JUL 28-AUG 10	1.16	1.21	1.14	0.81	1.00
17.AUG 11-AUG 24	1.22	1.25	1.27	0.94	1.13
18.AUG 25-SEP 07	1.15	1.25	1.25	0.93	1.12
19.SEP 08-SEP 21	1.25	1.29	1.28	1.06	1.25
20.SEP 22-OCT 05	1.30	1.22	1.29	0.96	1.15
21.OCT 06-OCT 19	1.32	1.26	1.28	1.20	1.39
22.OCT 20-NOV 02	1.19	1.23	1.23	0.94	1.13
23.NOV 03-NOV 16	1.18	1.20	1.22	0.94	1.13
24.NOV 17-NOV 30	1.10	1.12	1.20	0.94	1.13
25.DEC 01-DEC 14	1.20	1.20	1.22	1.09	1.28
26.DEC 15-DEC 28	1.20	1.24	1.23	0.95	1.14
AVERAGE TO DATE	1.27	1.25	1.26	1.03	1.22
RANGE - LOW	1.10	1.12	1.14	0.81	1.00
TO DATE - HIGH	1.45	1.37	1.30	1.25	1.44
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - McCREARY
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.24
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-588
OPERATOR - Ivan Harper
TELEPHONE - 835-2341
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.07	1.09	1.16	0.92	1.16
2.JAN 13-JAN 26	1.10	1.30	1.26	0.96	1.20
3.JAN 27-FEB 09	1.15	1.21	1.20	0.91	1.15
4.FEB 10-FEB 23	1.24	1.17	1.24	0.95	1.19
5.FEB 24-MAR 09	1.14	1.21	1.24	0.87	1.11
6.MAR 10-MAR 23	1.10	1.20	1.23	0.83	1.07
7.MAR 24-APR 06	1.07	1.26	1.23	0.89	1.13
8.APR 07-APR 20	1.10	1.31	1.28	0.90	1.14
9.APR 21-MAY 04	1.08	1.09	1.28	0.76	1.00
10.MAY 05-MAY 18	1.00	1.15	1.20	0.87	1.11
11.MAY 19-JUN 01	1.10	1.17	1.16	0.95	1.19
12.JUN 02-JUN 15	1.00	1.25	1.18	0.92	1.16
13.JUN 16-JUN 29	1.05	1.20	1.19	1.00	1.24
14.JUN 30-JUL 13	1.06	1.15	1.19	0.91	1.15
15.JUL 14-JUL 27	1.05	1.17	1.20	0.82	1.06
16.JUL 28-AUG 10	1.14	1.07	1.19	NOT AVAIL	0.00
17.AUG 11-AUG 24	1.14	1.07	1.18	0.96	1.20
18.AUG 25-SEP 07	1.05	1.14	1.19	1.07	1.31
19.SEP 08-SEP 21	1.03	1.27	1.22	0.92	1.16
20.SEP 22-OCT 05	1.09	1.04	1.14	0.88	1.12
21.OCT 06-OCT 19	1.15	1.20	1.23	0.94	1.18
22.OCT 20-NOV 02	1.19	1.07	1.17	1.02	1.26
23.NOV 03-NOV 16	1.10	1.27	1.20	1.02	1.26
24.NOV 17-NOV 30	1.15	1.06	1.20	0.98	1.22
25.DEC 01-DEC 14	1.19	1.26	1.21	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.18	1.15	1.17	0.98	1.22
AVERAGE TO DATE	1.10	1.17	1.21	0.93	1.17
RANGE - LOW	1.00	1.04	1.14	0.76	1.00
TO DATE - HIGH	1.24	1.31	1.28	1.07	1.31

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - MELITA
CHEMICAL - NaF 4%
TEST KIT - Hach DR-3
NATURAL FLUORIDE 0.18

FLUORIDATOR -W&T Saturator
OPERATOR - E. Pederson
TELEPHONE - 522-8481
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.04	1.15	1.25	1.38	1.56
2.JAN 13-JAN 26	1.04	1.15	1.21	1.29	1.47
3.JAN 27-FEB 09	1.10	1.20	1.33	1.28	1.46
4.FEB 10-FEB 23	1.10	1.42	1.28	1.34	1.52
5.FEB 24-MAR 09	1.04	1.20	1.24	1.30	1.48
6.MAR 10-MAR 23	1.05	1.10	1.14	1.25	1.43
7.MAR 24-APR 06	1.22	1.20	1.23	1.52	1.70
8.APR 07-APR 20	1.26	1.30	1.29	1.31	1.49
9.APR 21-MAY 04	1.19	1.23	1.27	1.54	1.72
10.MAY 05-MAY 18	1.00	NOT AVAIL	0.00	NOT AVAIL	0.00
11.MAY 19-JUN 01	1.12	1.20	1.23	1.34	1.52
12.JUN 02-JUN 15	1.10	1.21	1.20	1.26	1.44
13.JUN 16-JUN 29	1.15	1.14	1.17	1.40	1.58
14.JUN 30-JUL 13	1.10	1.11	1.17	1.24	1.42
15.JUL 14-JUL 27	1.23	1.15	1.26	1.46	1.64
16.JUL 28-AUG 10	1.20	1.26	1.30	1.38	1.56
17.AUG 11-AUG 24	1.07	1.15	1.15	1.38	1.56
18.AUG 25-SEP 07	1.03	1.10	1.11	1.75	1.93
19.SEP 08-SEP 21	1.30	1.26	1.27	1.44	1.62
20.SEP 22-OCT 05	1.10	1.20	1.21	1.32	1.50
21.OCT 06-OCT 19	1.10	1.20	1.21	1.23	1.41
22.OCT 20-NOV 02	1.23	1.30	1.25	1.32	1.50
23.NOV 03-NOV 16	1.10	1.30	1.29	1.23	1.41
24.NOV 17-NOV 30	1.05	1.00	1.14	1.41	1.59
25.DEC 01-DEC 14	1.00	1.15	1.14	1.44	1.62
26.DEC 15-DEC 28	1.08	1.15	1.17	1.59	1.77
AVERAGE TO DATE	1.12	1.19	1.22	1.37	1.55
RANGE - LOW	1.00	1.00	1.11	1.23	1.41
TO DATE - HIGH	1.30	1.42	1.33	1.75	1.93

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - MINNEDOSA
CHEMICAL - NaF 4%
TEST KIT - Hach Filterphotometer
NATURAL FLUORIDE 0.28

FLUORIDATOR -W&T A-417
OPERATOR - A. Jamieson
TELEPHONE - 867-2949
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.98	1.20	1.12	1.15	1.43
2.JAN 13-JAN 26	0.91	1.10	1.13	0.59	0.87
3.JAN 27-FEB 09	1.04	1.05	1.08	0.44	0.72
4.FEB 10-FEB 23	1.05	1.10	1.14	0.74	1.02
5.FEB 24-MAR 09	1.00	1.15	1.11	0.59	0.87
6.MAR 10-MAR 23	1.03	1.15	1.10	0.59	0.87
7.MAR 24-APR 06	1.14	1.20	1.13	0.82	1.10
8.APR 07-APR 20	1.21	1.25	1.13	0.88	1.16
9.APR 21-MAY 04	1.07	1.20	1.19	0.79	1.07
10.MAY 05-MAY 18	1.00	1.25	1.18	0.88	1.16
11.MAY 19-JUN 01	1.09	1.25	1.17	0.71	0.99
12.JUN 02-JUN 15	0.97	1.10	1.12	0.75	1.03
13.JUN 16-JUN 29	0.98	1.10	1.11	0.73	1.01
14.JUN 30-JUL 13	1.03	1.10	1.07	0.56	0.84
15.JUL 14-JUL 27	0.95	1.05	1.09	0.63	0.91
16.JUL 28-AUG 10	1.55	1.00	1.03	0.80	1.08
17.AUG 11-AUG 24	1.00	1.00	1.05	0.89	1.17
18.AUG 25-SEP 07	1.05	1.10	1.08	0.70	0.98
19.SEP 08-SEP 21	0.86	1.20	1.08	0.72	1.00
20.SEP 22-OCT 05	1.00	1.20	1.17	0.89	1.17
21.OCT 06-OCT 19	1.05	1.05	1.10	0.71	0.99
22.OCT 20-NOV 02	1.12	1.20	1.18	1.02	1.30
23.NOV 03-NOV 16	1.18	1.20	1.14	1.07	1.35
24.NOV 17-NOV 30	0.61	0.60	0.82	NOT AVAIL	0.00
25.DEC 01-DEC 14	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.36	1.25	1.13	NOT AVAIL	0.00
AVERAGE TO DATE	1.05	1.12	1.11	0.77	1.05
RANGE - LOW	0.61	0.60	0.82	0.44	0.72
TO DATE - HIGH	1.55	1.25	1.19	1.15	1.43

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	12.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - MORDEN
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.32

FLUORIDATOR -LMI B-731
OPERATOR - L. Wieler
TELEPHONE - 822-5707
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.20	1.20	1.21	1.08	1.40
2.JAN 13-JAN 26	1.21	1.30	1.27	1.01	1.33
3.JAN 27-FEB 09	1.18	1.25	1.21	1.22	1.54
4.FEB 10-FEB 23	1.34	1.40	1.31	1.04	1.36
5.FEB 24-MAR 09	1.24	1.20	1.25	1.06	1.38
6.MAR 10-MAR 23	1.26	1.30	1.23	0.99	1.31
7.MAR 24-APR 06	1.17	1.25	1.17	0.90	1.22
8.APR 07-APR 20	1.06	1.15	1.11	0.84	1.16
9.APR 21-MAY 04	1.04	1.10	1.08	1.16	1.48
10.MAY 05-MAY 18	1.07	1.10	1.12	0.88	1.20
11.MAY 19-JUN 01	1.03	1.10	1.09	0.89	1.21
12.JUN 02-JUN 15	1.00	1.05	1.08	0.87	1.19
13.JUN 16-JUN 29	0.92	0.08	1.08	0.88	1.20
14.JUN 30-JUL 13	1.15	1.05	1.13	0.88	1.20
15.JUL 14-JUL 27	1.00	1.00	1.05	0.89	1.21
16.JUL 28-AUG 10	1.10	1.10	1.14	0.87	1.19
17.AUG 11-AUG 24	0.97	1.05	1.05	0.85	1.17
18.AUG 25-SEP 07	0.94	1.05	1.06	0.95	1.27
19.SEP 08-SEP 21	1.06	1.10	1.10	0.90	1.22
20.SEP 22-OCT 05	1.08	1.05	1.13	1.54	1.86
21.OCT 06-OCT 19	1.12	1.05	1.12	0.92	1.24
22.OCT 20-NOV 02	1.10	1.05	1.11	0.94	1.26
23.NOV 03-NOV 16	1.12	1.15	1.14	0.96	1.28
24.NOV 17-NOV 30	1.20	1.20	1.19	1.01	1.33
25.DEC 01-DEC 14	1.10	1.15	1.20	NOT AVAIL	0.00
26.DEC 15-DEC 28	1.08	1.20	1.16	1.08	1.40
AVERAGE TO DATE	1.11	1.10	1.14	0.98	1.30
RANGE - LOW	0.92	0.08	1.05	0.84	1.16
TO DATE - HIGH	1.34	1.40	1.31	1.54	1.86
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - MORRIS
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.22

FLUORIDATOR -LM1
OPERATOR - S. Johnston
TELEPHONE - 746-2531
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.22	1.10	1.10	0.35	0.57
2.JAN 13-JAN 26	1.08	1.10	1.18	0.28	0.50
3.JAN 27-FEB 09	1.10	1.10	1.24	0.32	0.54
4.FEB 10-FEB 23	1.00	1.10	1.14	0.27	0.49
5.FEB 24-MAR 09	1.04	1.20	1.20	0.34	0.56
6.MAR 10-MAR 23	1.04	1.10	1.20	0.29	0.51
7.MAR 24-APR 06	1.00	1.20	1.20	0.41	0.63
8.APR 07-APR 20	0.86	1.10	1.17	0.39	0.61
9.APR 21-MAY 04	0.98	1.10	1.20	0.28	0.50
10.MAY 05-MAY 18	NOT AVAIL	1.10	1.12	0.38	0.60
11.MAY 19-JUN 01	1.03	1.00	1.10	0.30	0.52
12.JUN 02-JUN 15	0.96	1.20	1.06	0.51	0.73
13.JUN 16-JUN 29	1.05	NOT AVAIL	1.11	0.25	0.47
14.JUN 30-JUL 13	1.16	1.00	1.02	0.27	0.49
15.JUL 14-JUL 27	0.92	1.00	1.07	0.30	0.52
16.JUL 28-AUG 10	1.20	1.20	1.08	0.29	0.51
17.AUG 11-AUG 24	0.88	1.00	1.10	0.44	0.66
18.AUG 25-SEP 07	0.83	1.00	1.10	0.39	0.61
19.SEP 08-SEP 21	0.90	1.00	1.09	0.45	0.67
20.SEP 22-OCT 05	0.87	1.10	1.10	0.47	0.69
21.OCT 06-OCT 19	0.85	1.00	1.02	0.23	0.45
22.OCT 20-NOV 02	0.82	1.00	1.00	0.55	0.77
23.NOV 03-NOV 16	0.93	1.00	1.00	0.48	0.70
24.NOV 17-NOV 30	1.05	0.98	1.00	0.58	0.80
25.DEC 01-DEC 14	1.10	0.98	1.00	0.62	0.84
26.DEC 15-DEC 28	1.15	1.00	1.16	4.50	4.72
AVERAGE TO DATE	1.00	1.07	1.11	0.54	0.76
RANGE - LOW	0.82	0.98	1.00	0.23	0.45
TO DATE - HIGH	1.22	1.20	1.24	4.50	4.72

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	6
% OUTSIDE LIMITS TO DATE	24.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - NEEPAWA
CHEMICAL - Na2SiF6 (Dry)
TEST KIT - Hach DR-2
NATURAL FLUORIDE 0.24

FLUORIDATOR -W&T A-690
OPERATOR - G. Squires
TELEPHONE - 476-5331
CALCULATION - 60000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.00	NOT AVAIL	1.09	1.04	1.30
2.JAN 13-JAN 26	1.00	1.10	1.16	1.08	1.35
3.JAN 27-FEB 09	1.04	1.10	1.14	1.12	1.36
4.FEB 10-FEB 23	1.17	1.15	1.16	0.96	1.23
5.FEB 24-MAR 09	1.10	1.10	1.13	1.10	1.37
6.MAR 10-MAR 23	1.12	1.10	1.14	1.06	1.36
7.MAR 24-APR 06	1.07	1.15	1.15	0.99	1.30
8.APR 07-APR 20	1.12	1.15	1.16	0.93	1.24
9.APR 21-MAY 04	1.00	1.10	1.11	1.03	1.27
10.MAY 05-MAY 18	1.05	1.14	1.14	1.12	1.31
11.MAY 19-JUN 01	1.06	1.12	1.13	1.05	1.23
12.JUN 02-JUN 15	0.96	1.08	1.08	1.16	1.36
13.JUN 16-JUN 29	1.15	1.20	1.19	1.39	1.66
14.JUN 30-JUL 13	1.10	1.20	1.16	1.14	1.38
15.JUL 14-JUL 27	1.00	1.15	1.16	1.04	1.27
16.JUL 28-AUG 10	1.05	1.10	1.13	1.07	1.35
17.AUG 11-AUG 24	1.00	1.10	1.02	1.12	1.32
18.AUG 25-SEP 07	1.27	1.10	1.00	1.28	1.60
19.SEP 08-SEP 21	1.15	1.19	1.19	1.35	1.60
20.SEP 22-OCT 05	1.35	1.20	1.20	1.36	1.58
21.OCT 06-OCT 19	1.10	1.20	1.23	1.29	1.52
22.OCT 20-NOV 02	1.10	1.20	1.19	1.18	1.41
23.NOV 03-NOV 16	1.15	1.20	1.25	1.11	1.34
24.NOV 17-NOV 30	1.05	1.20	1.22	1.01	1.24
25.DEC 01-DEC 14	1.04	1.20	1.19	1.04	1.28
26.DEC 15-DEC 28	1.05	1.30	1.18	1.05	1.35
AVERAGE TO DATE	1.09	1.15	1.15	1.12	1.37
RANGE - LOW	0.96	1.08	1.00	0.93	1.23
TO DATE - HIGH	1.35	1.30	1.25	1.39	1.66
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - PILOT MOUND
CHEMICAL - NaF 2.73%
TEST KIT - Hach DR-2
NATURAL FLUORIDE 0.21
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-588
OPERATOR - Gary Odlum
TELEPHONE - 825-2115
CALCULATION - 12000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.17	1.32	1.34	0.83	1.04
2.JAN 13-JAN 26	1.21	1.33	1.34	0.84	1.05
3.JAN 27-FEB 09	1.35	1.35	1.34	0.87	1.08
4.FEB 10-FEB 23	1.20	1.32	1.34	0.87	1.08
5.FEB 24-MAR 09	1.24	1.33	1.35	0.82	1.03
6.MAR 10-MAR 23	1.35	1.37	1.39	0.83	1.04
7.MAR 24-APR 06	1.24	NOT AVAIL	1.33	0.79	1.00
8.APR 07-APR 20	1.20	1.24	1.28	0.81	1.02
9.APR 21-MAY 04	1.18	1.33	1.33	0.88	1.09
10.MAY 05-MAY 18	1.20	1.30	1.33	0.87	1.08
11.MAY 19-JUN 01	1.25	1.16	1.25	0.87	1.08
12.JUN 02-JUN 15	1.20	1.22	1.26	0.89	1.10
13.JUN 16-JUN 29	1.22	1.26	1.29	0.93	1.14
14.JUN 30-JUL 13	1.39	1.17	1.32	0.92	1.13
15.JUL 14-JUL 27	1.30	1.30	1.36	0.90	1.11
16.JUL 28-AUG 10	1.25	1.29	1.33	0.84	1.05
17.AUG 11-AUG 24	1.25	1.32	1.34	0.85	1.06
18.AUG 25-SEP 07	1.27	1.27	1.29	0.83	1.04
19.SEP 08-SEP 21	1.30	1.23	1.29	0.82	1.03
20.SEP 22-OCT 05	1.16	1.26	1.29	0.83	1.04
21.OCT 06-OCT 19	1.13	1.23	1.28	0.80	1.01
22.OCT 20-NOV 02	1.15	1.25	1.26	0.75	0.96
23.NOV 03-NOV 16	1.12	1.15	1.22	0.69	0.90
24.NOV 17-NOV 30	1.06	1.10	1.18	0.70	0.91
25.DEC 01-DEC 14	1.07	1.19	1.19	0.71	0.92
26.DEC 15-DEC 28	1.10	1.16	1.19	0.65	0.86
AVERAGE TO DATE	1.21	1.26	1.30	0.82	1.03
RANGE - LOW	1.06	1.10	1.18	0.65	0.86
TO DATE - HIGH	1.39	1.37	1.39	0.93	1.14
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - PINAWA
CHEMICAL - NaF2SiF6
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.08

FLUORIDATOR -W&T A-690
OPERATOR - Ron McDowall
TELEPHONE - 753-2542
CALCULATION - 60000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.03	1.10	0.77	0.85
2.JAN 13-JAN 26	1.00	1.05	1.08	0.77	0.85
3.JAN 27-FEB 09	1.09	1.10	1.10	0.87	0.95
4.FEB 10-FEB 23	1.20	1.05	1.07	0.84	0.92
5.FEB 24-MAR 09	1.24	1.21	1.18	1.04	1.12
6.MAR 10-MAR 23	1.25	1.14	1.14	0.66	0.74
7.MAR 24-APR 06	1.40	1.15	1.14	1.01	1.09
8.APR 07-APR 20	1.00	1.06	1.07	0.68	0.76
9.APR 21-MAY 04	1.18	1.15	1.14	0.78	0.86
10.MAY 05-MAY 18	1.15	1.10	1.12	0.63	0.71
11.MAY 19-JUN 01	1.20	1.15	1.15	0.61	0.69
12.JUN 02-JUN 15	1.35	1.15	1.15	0.66	0.74
13.JUN 16-JUN 29	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
14.JUN 30-JUL 13	1.26	1.30	1.16	0.69	0.77
15.JUL 14-JUL 27	1.27	1.12	1.10	0.72	0.80
16.JUL 28-AUG 10	0.55	NOT AVAIL	0.14	0.37	0.45
17.AUG 11-AUG 24	1.30	1.03	1.15	0.61	0.69
18.AUG 25-SEP 07	1.08	1.15	1.15	0.71	0.79
19.SEP 08-SEP 21	1.25	1.15	1.09	1.16	1.24
20.SEP 22-OCT 05	1.10	1.07	1.09	0.78	0.86
21.OCT 06-OCT 19	1.18	1.10	1.10	0.77	0.85
22.OCT 20-NOV 02	1.19	1.12	1.15	0.74	0.82
23.NOV 03-NOV 16	1.15	1.00	1.07	0.79	0.87
24.NOV 17-NOV 30	1.20	1.20	1.05	0.85	0.93
25.DEC 01-DEC 14	1.05	1.09	1.10	0.79	0.87
26.DEC 15-DEC 28	1.10	1.07	1.20	0.84	0.92
AVERAGE TO DATE	1.15	1.11	1.08	0.76	0.84
RANGE - LOW	0.55	1.00	0.14	0.37	0.45
TO DATE - HIGH	1.40	1.30	1.20	1.16	1.24
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	1				
% OUTSIDE LIMITS TO DATE	4.00%				
NUMBER OF SAMPLES TO DATE	25				

FLUORIDE CONTROL DATA - 1990

LOCATION - PORTAGE LA PRAIRIE
CHEMICAL - Na2SiF6 (Dry)
TEST KIT - Specific Ion Electrode
NATURAL FLUORIDE 0.20

FLUORIDATOR -W&T A-690
OPERATOR - Dave Pirt
TELEPHONE - 857-9781
CALCULATION - 60000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.20	1.19	1.19	0.87	1.07
2.JAN 13-JAN 26	1.21	1.24	1.15	0.88	1.08
3.JAN 27-FEB 09	1.23	1.24	1.22	0.84	1.04
4.FEB 10-FEB 23	1.20	1.15	1.19	0.81	1.01
5.FEB 24-MAR 09	1.40	1.31	1.24	0.99	1.19
6.MAR 10-MAR 23	1.31	1.31	1.27	0.91	1.11
7.MAR 24-APR 06	1.08	1.21	1.19	0.78	0.98
8.APR 07-APR 20	1.15	1.23	1.23	0.83	1.03
9.APR 21-MAY 04	1.00	1.18	1.17	0.75	0.95
10.MAY 05-MAY 18	1.06	1.15	1.20	0.86	1.06
11.MAY 19-JUN 01	0.95	1.10	1.15	0.84	1.04
12.JUN 02-JUN 15	1.05	1.12	1.11	0.93	1.13
13.JUN 16-JUN 29	1.15	0.95	1.18	1.18	1.38
14.JUN 30-JUL 13	1.25	1.32	1.27	1.01	1.21
15.JUL 14-JUL 27	1.20	1.08	1.13	0.97	1.17
16.JUL 28-AUG 10	1.16	1.21	1.19	0.93	1.13
17.AUG 11-AUG 24	1.25	1.23	1.22	0.96	1.16
18.AUG 25-SEP 07	1.24	1.25	1.22	0.92	1.12
19.SEP 08-SEP 21	1.18	1.20	1.20	0.84	1.04
20.SEP 22-OCT 05	1.30	1.18	1.19	0.90	1.10
21.OCT 06-OCT 19	1.28	1.21	1.18	0.91	1.11
22.OCT 20-NOV 02	1.33	1.12	1.20	0.90	1.10
23.NOV 03-NOV 16	1.30	1.24	1.21	0.88	1.08
24.NOV 17-NOV 30	1.28	1.29	1.19	0.87	1.07
25.DEC 01-DEC 14	1.35	1.30	1.23	0.96	1.16
26.DEC 15-DEC 28	1.30	1.27	1.19	0.94	1.14
AVERAGE TO DATE	1.21	1.20	1.20	0.90	1.10
RANGE - LOW	0.95	0.95	1.11	0.75	0.95
TO DATE - HIGH	1.40	1.32	1.27	1.18	1.38
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - RESTON
CHEMICAL - NaF 1.5%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.13
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-745
OPERATOR - Ken Moore
TELEPHONE - 857-9781
CALCULATION - 6600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	1.25	1.22	0.83	0.96
2.JAN 13-JAN 26	1.03	1.18	1.19	0.81	0.94
3.JAN 27-FEB 09	1.04	1.15	1.18	0.81	0.94
4.FEB 10-FEB 23	1.05	1.15	1.18	0.82	0.95
5.FEB 24-MAR 09	1.07	1.18	1.18	0.94	1.07
6.MAR 10-MAR 23	1.35	1.25	1.23	0.94	1.07
7.MAR 24-APR 06	1.17	1.20	1.20	0.89	1.02
8.APR 07-APR 20	1.12	1.22	1.21	0.82	0.95
9.APR 21-MAY 04	0.95	1.18	1.18	0.83	0.96
10.MAY 05-MAY 18	1.10	1.18	1.19	0.81	0.94
11.MAY 19-JUN 01	1.14	1.20	1.20	0.70	0.83
12.JUN 02-JUN 15	1.20	1.22	1.13	0.72	0.85
13.JUN 16-JUN 29	1.15	1.20	1.20	0.80	0.93
14.JUN 30-JUL 13	1.20	1.20	1.20	0.81	0.94
15.JUL 14-JUL 27	1.34	1.20	1.20	0.75	0.88
16.JUL 28-AUG 10	1.20	1.20	1.20	0.74	0.87
17.AUG 11-AUG 24	1.24	1.20	1.20	0.82	0.95
18.AUG 25-SEP 07	1.07	1.15	1.10	0.85	0.98
19.SEP 08-SEP 21	1.25	1.25	1.22	0.78	0.91
20.SEP 22-OCT 05	1.18	1.20	1.20	0.84	0.97
21.OCT 06-OCT 19	1.16	1.20	1.20	0.89	1.02
22.OCT 20-NOV 02	1.30	1.20	1.21	0.86	0.99
23.NOV 03-NOV 16	1.23	1.20	1.20	0.87	1.00
24.NOV 17-NOV 30	1.05	1.15	1.16	1.48	1.61
25.DEC 01-DEC 14	1.04	1.20	1.20	1.35	1.48
26.DEC 15-DEC 28	1.05	1.15	1.16	1.08	1.21
AVERAGE TO DATE	1.15	1.19	1.19	0.88	1.01
RANGE - LOW	0.95	1.15	1.10	0.70	0.83
TO DATE - HIGH	1.35	1.25	1.23	1.48	1.61
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - RIVERS
CHEMICAL - NaF 4%
TEST KIT - Hach DR-2 Spectrophotometer
NATURAL FLUORIDE 0.18

FLUORIDATOR -LMI Saturator
OPERATOR Jeff Worth
TELEPHONE - 328-7480
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.77	1.00	1.08	0.92	1.10
2.JAN 13-JAN 26	0.69	1.00	1.02	0.69	0.87
3.JAN 27-FEB 09	0.68	0.90	0.94	0.53	0.71
4.FEB 10-FEB 23	0.64	0.80	0.89	0.45	0.63
5.FEB 24-MAR 09	1.03	1.10	0.94	0.69	0.87
6.MAR 10-MAR 23	0.67	0.95	1.00	0.51	0.69
7.MAR 24-APR 06	0.70	1.05	0.91	0.44	0.62
8.APR 07-APR 20	0.48	0.80	0.84	0.28	0.46
9.APR 21-MAY 04	0.60	0.85	0.93	0.51	0.69
10.MAY 05-MAY 18	0.63	1.00	0.98	0.85	1.03
11.MAY 19-JUN 01	0.70	1.00	0.99	0.63	0.81
12.JUN 02-JUN 15	0.72	0.90	0.90	0.54	0.72
13.JUN 16-JUN 29	1.00	1.10	1.09	NOT AVAIL	0.00
14.JUN 30-JUL 13	1.19	0.90	1.06	NOT AVAIL	0.00
15.JUL 14-JUL 27	1.45	1.20	1.12	0.90	1.08
16.JUL 28-AUG 10	1.70	1.30	1.13	1.31	1.49
17.AUG 11-AUG 24	1.08	1.10	1.05	0.94	1.12
18.AUG 25-SEP 07	1.15	1.10	1.09	1.14	1.32
19.SEP 08-SEP 21	1.05	1.00	1.03	1.09	1.27
20.SEP 22-OCT 05	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
21.OCT 06-OCT 19	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
22.OCT 20-NOV 02	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
23.NOV 03-NOV 16	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
24.NOV 17-NOV 30	0.43	0.70	0.74	0.43	0.61
25.DEC 01-DEC 14	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
26.DEC 15-DEC 28	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
AVERAGE TO DATE	0.87	0.99	0.99	0.71	0.89
RANGE - LOW	0.43	0.70	0.74	0.28	0.46
TO DATE - HIGH	1.70	1.30	1.13	1.31	1.49

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	12
% OUTSIDE LIMITS TO DATE	65.00%
NUMBER OF SAMPLES TO DATE	20

NOTE: Rivers' plant experienced mechanical problems throughout 1990. The fluoridation system was to be replaced and was expected to be operational in early 1991.

FLUORIDE CONTROL DATA - 1990

LOCATION - ROBLIN
CHEMICAL - NaF 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.26

FLUORIDATOR -W&T A-745
OPERATOR - Nick Holopina
TELEPHONE - 937-2377
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.07	1.10	0.78	1.04
2.JAN 13-JAN 26	1.14	1.15	1.12	0.80	1.06
3.JAN 27-FEB 09	0.90	1.05	1.07	0.62	0.88
4.FEB 10-FEB 23	1.17	NOT AVAIL	1.15	0.78	1.04
5.FEB 24-MAR 09	1.14	1.05	1.05	0.78	1.04
6.MAR 10-MAR 23	0.95	1.15	1.14	0.79	1.05
7.MAR 24-APR 06	1.06	1.10	1.09	0.90	1.16
8.APR 07-APR 20	1.20	1.15	1.15	0.81	1.07
9.APR 21-MAY 04	0.95	1.15	1.05	0.85	1.11
10.MAY 05-MAY 18	0.94	1.10	1.09	0.75	1.01
11.MAY 19-JUN 01	1.14	1.10	1.09	0.76	1.02
12.JUN 02-JUN 15	1.05	1.12	1.12	0.82	1.08
13.JUN 16-JUN 29	1.10	1.15	1.14	0.83	1.09
14.JUN 30-JUL 13	1.12	1.15	1.13	0.77	1.03
15.JUL 14-JUL 27	0.98	1.10	1.09	0.78	1.04
16.JUL 28-AUG 10	0.75	1.00	1.10	0.73	0.99
17.AUG 11-AUG 24	1.02	1.10	1.09	0.75	1.01
18.AUG 25-SEP 07	1.14	1.15	1.14	0.89	1.15
19.SEP 08-SEP 21	1.10	1.10	1.09	0.87	1.13
20.SEP 22-OCT 05	1.14	1.15	1.11	0.81	1.07
21.OCT 06-OCT 19	1.17	1.20	1.18	0.94	1.20
22.OCT 20-NOV 02	1.13	1.15	1.14	0.93	1.19
23.NOV 03-NOV 16	1.05	1.10	1.11	0.92	1.18
24.NOV 17-NOV 30	1.14	1.20	1.17	0.84	1.10
25.DEC 01-DEC 14	1.12	1.15	1.15	0.93	1.19
26.DEC 15-DEC 28	1.14	1.10	1.10	1.07	1.33
AVERAGE TO DATE	1.07	1.12	1.11	0.83	1.09
RANGE - LOW	0.75	1.00	1.05	0.62	0.88
TO DATE - HIGH	1.20	1.20	1.18	1.07	1.33

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	3.85%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - ROSSBURN
CHEMICAL - NaF 1.5%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.10
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-745
OPERATOR - Doug Joiner
TELEPHONE - 859-2762
CALCULATION - 6600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	NOT AVAIL	1.12	0.80	0.90
2.JAN 13-JAN 26	1.25	1.12	1.12	0.86	0.96
3.JAN 27-FEB 09	1.25	1.12	1.11	0.83	0.93
4.FEB 10-FEB 23	1.20	1.13	1.13	0.87	0.97
5.FEB 24-MAR 09	1.10	1.15	1.15	0.76	0.86
6.MAR 10-MAR 23	1.22	1.15	1.17	0.92	1.02
7.MAR 24-APR 06	1.17	1.15	1.20	0.83	0.93
8.APR 07-APR 20	1.10	1.18	1.18	0.82	0.92
9.APR 21-MAY 04	1.15	1.18	1.18	0.80	0.90
10.MAY 05-MAY 18	1.20	1.15	1.16	0.83	0.93
11.MAY 19-JUN 01	1.25	1.15	1.14	0.76	0.86
12.JUN 02-JUN 15	1.05	1.05	1.15	0.80	0.90
13.JUN 16-JUN 29	0.95	1.20	1.19	0.83	0.93
14.JUN 30-JUL 13	0.95	1.20	1.19	0.83	0.93
15.JUL 14-JUL 27	1.06	1.18	1.20	0.80	0.90
16.JUL 28-AUG 10	1.10	1.18	1.18	0.80	0.90
17.AUG 11-AUG 24	0.90	1.20	1.19	0.86	0.96
18.AUG 25-SEP 07	1.08	1.20	1.20	0.86	0.96
19.SEP 08-SEP 21	1.06	1.16	1.16	0.58	0.68
20.SEP 22-OCT 05	NOT AVAIL	1.16	1.16	0.80	0.90
21.OCT 06-OCT 19	1.05	1.16	1.16	0.81	0.91
22.OCT 20-NOV 02	1.19	1.14	1.15	0.83	0.93
23.NOV 03-NOV 16	1.13	1.13	1.13	0.87	0.97
24.NOV 17-NOV 30	1.35	1.40	1.13	0.71	0.81
25.DEC 01-DEC 14	1.17	1.14	1.14	0.72	0.82
26.DEC 15-DEC 28	1.20	1.14	1.14	0.71	0.81
AVERAGE TO DATE	1.13	1.16	1.16	0.80	0.90
RANGE - LOW	0.90	1.05	1.11	0.58	0.68
TO DATE - HIGH	1.35	1.40	1.20	0.92	1.02

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - RUSSELL
CHEMICAL - NaF 2%
TEST KIT - Hach DR-2
NATURAL FLUORIDE - 0.21
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W&T A-747
OPERATOR - H. Schrader
TELEPHONE - 773-3185
CALCULATION - 4400

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.25	1.20	1.22	1.21	1.42
2.JAN 13-JAN 26	1.21	1.20	1.25	1.03	1.24
3.JAN 27-FEB 09	1.15	1.15	1.21	1.29	1.50
4.FEB 10-FEB 23	1.25	1.20	1.23	1.10	1.31
5.FEB 24-MAR 09	1.15	1.20	1.22	0.96	1.17
6.MAR 10-MAR 23	1.15	1.20	1.23	1.02	1.23
7.MAR 24-APR 06	1.16	1.20	1.24	1.16	1.37
8.APR 07-APR 20	1.27	1.25	1.16	1.09	1.30
9.APR 21-MAY 04	1.12	1.20	1.20	1.00	1.21
10.MAY 05-MAY 18	1.19	1.30	1.28	1.03	1.24
11.MAY 19-JUN 01	1.14	1.20	1.23	0.96	1.17
12.JUN 02-JUN 15	1.05	1.10	1.20	1.05	1.26
13.JUN 16-JUN 29	1.15	1.15	1.23	0.93	1.14
14.JUN 30-JUL 13	1.26	1.25	1.27	0.96	1.17
15.JUL 14-JUL 27	1.23	1.20	1.26	1.00	1.21
16.JUL 28-AUG 10	1.10	1.20	1.21	1.04	1.25
17.AUG 11-AUG 24	1.25	1.25	1.27	1.07	1.28
18.AUG 25-SEP 07	1.24	1.25	1.23	1.02	1.23
19.SEP 08-SEP 21	1.40	1.25	1.30	1.03	1.24
20.SEP 22-OCT 05	1.24	1.20	1.23	1.08	1.29
21.OCT 06-OCT 19	1.25	1.20	1.26	1.04	1.25
22.OCT 20-NOV 02	1.13	1.50	1.24	1.00	1.21
23.NOV 03-NOV 16	1.13	1.20	1.22	0.91	1.12
24.NOV 17-NOV 30	1.19	1.10	1.18	1.03	1.24
25.DEC 01-DEC 14	NOT AVAIL	1.15	1.18	0.86	1.07
26.DEC 15-DEC 28	1.18	1.50	1.18	1.05	1.26
AVERAGE TO DATE	1.19	1.22	1.23	1.04	1.25
RANGE - LOW	1.05	1.10	1.16	0.86	1.07
TO DATE - HIGH	1.40	1.50	1.30	1.29	1.50

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - ST. JEAN
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.22
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -LMI SAT.
OPERATOR - H. Benjamin
TELEPHONE - 758-3805
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.20	1.18	0.84	1.06
2.JAN 13-JAN 26	1.30	1.10	1.16	0.68	0.90
3.JAN 27-FEB 09	1.25	0.60	1.20	1.20	1.42
4.FEB 10-FEB 23	1.00	1.15	1.01	0.64	0.86
5.FEB 24-MAR 09	1.10	1.15	1.22	1.21	1.43
6.MAR 10-MAR 23	1.15	1.20	1.05	0.81	1.03
7.MAR 24-APR 06	1.30	1.25	1.20	1.30	1.52
8.APR 07-APR 20	1.20	1.25	1.21	1.14	1.36
9.APR 21-MAY 04	1.15	1.25	1.23	0.69	0.91
10.MAY 05-MAY 18	1.21	1.25	1.21	1.03	1.25
11.MAY 19-JUN 01	1.06	1.20	1.19	1.06	1.28
12.JUN 02-JUN 15	1.20	1.20	1.19	0.74	0.96
13.JUN 16-JUN 29	1.25	1.15	1.17	0.93	1.15
14.JUN 30-JUL 13	1.25	1.25	1.08	1.14	1.36
15.JUL 14-JUL 27	1.33	1.20	1.23	0.99	1.21
16.JUL 28-AUG 10	1.21	1.25	1.21	0.75	0.97
17.AUG 11-AUG 24	1.18	1.20	1.21	0.98	1.20
18.AUG 25-SEP 07	1.20	1.20	1.20	1.11	1.33
19.SEP 08-SEP 21	1.15	1.20	1.20	0.68	0.90
20.SEP 22-OCT 05	1.18	1.20	1.20	0.72	0.94
21.OCT 06-OCT 19	1.09	NOT AVAIL	1.19	1.05	1.27
22.OCT 20-NOV 02	1.23	1.20	1.20	1.08	1.30
23.NOV 03-NOV 16	1.10	1.20	1.20	0.82	1.04
24.NOV 17-NOV 30	1.40	1.30	1.24	0.95	1.17
25.DEC 01-DEC 14	1.19	NOT AVAIL	1.19	0.74	0.96
26.DEC 15-DEC 28	1.16	1.25	1.20	0.98	1.20
AVERAGE TO DATE	1.19	1.18	1.18	0.93	1.15
RANGE - LOW	1.00	0.60	1.01	0.64	0.86
TO DATE - HIGH	1.40	1.30	1.24	1.30	1.52
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	0				
% OUTSIDE LIMITS TO DATE	0.00%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - STE. ROSE DU LAC
CHEMICAL - NaF 4%
TEST KIT - Hach DR-3
NATURAL FLUORIDE 0.12

FLUORIDATOR -LMI - A741
OPERATOR - Don Luke
TELEPHONE - 477-2675
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.20	1.29	1.19	0.97	1.09
2.JAN 13-JAN 26	1.00	1.02	1.00	0.98	1.10
3.JAN 27-FEB 09	1.03	1.01	1.00	1.19	1.31
4.FEB 10-FEB 23	1.09	1.13	1.09	1.09	1.21
5.FEB 24-MAR 09	1.24	1.15	1.16	1.00	1.12
6.MAR 10-MAR 23	1.00	0.95	0.88	1.21	1.33
7.MAR 24-APR 06	1.10	1.26	1.20	0.89	1.01
8.APR 07-APR 20	1.09	1.00	1.06	0.98	1.10
9.APR 21-MAY 04	0.98	0.88	0.91	0.67	0.79
10.MAY 05-MAY 18	0.53	0.88	0.80	0.98	1.10
11.MAY 19-JUN 01	1.12	1.05	1.05	0.91	1.03
12.JUN 02-JUN 15	1.15	1.15	1.15	1.09	1.21
13.JUN 16-JUN 29	1.25	0.98	0.99	0.88	1.00
14.JUN 30-JUL 13	0.79	NOT AVAIL	0.00	NOT AVAIL	0.00
15.JUL 14-JUL 27	1.10	1.09	1.08	1.06	1.18
16.JUL 28-AUG 10	1.14	0.99	0.92	0.75	0.87
17.AUG 11-AUG 24	0.95	0.98	0.98	0.88	1.00
18.AUG 25-SEP 07	1.15	1.15	1.10	1.22	1.34
19.SEP 08-SEP 21	1.35	1.17	1.19	1.09	1.21
20.SEP 22-OCT 05	1.34	1.19	1.16	1.00	1.12
21.OCT 06-OCT 19	0.97	1.01	0.94	0.84	0.96
22.OCT 20-NOV 02	1.00	0.83	0.83	1.01	1.13
23.NOV 03-NOV 16	0.83	0.72	0.98	1.21	1.33
24.NOV 17-NOV 30	0.59	0.50	0.67	1.00	1.12
25.DEC 01-DEC 14	1.19	1.02	0.99	1.07	1.19
26.DEC 15-DEC 28	1.18	1.01	0.98	1.30	1.42
AVERAGE TO DATE	1.05	1.02	1.01	1.01	1.13
RANGE - LOW	0.53	0.50	0.67	0.67	0.79
TO DATE - HIGH	1.35	1.29	1.20	1.30	1.42
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	4				
% OUTSIDE LIMITS TO DATE	15.38%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - SANDY BAY
CHEMICAL - NaF
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.22

FLUORIDATOR - LMI SAT.
OPERATOR - Ed Houle
TELEPHONE - 843-2437
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
2.JAN 13-JAN 26	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
3.JAN 27-FEB 09	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
4.FEB 10-FEB 23	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
5.FEB 24-MAR 09	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
6.MAR 10-MAR 23	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
7.MAR 24-APR 06	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
8.APR 07-APR 20	1.60	1.02	1.03	1.23	1.45
9.APR 21-MAY 04	0.70	0.80	0.00	1.96	2.18
10.MAY 05-MAY 18	1.10	0.90	0.36	0.51	0.73
11.MAY 19-JUN 01	1.00	1.00	0.62	0.29	0.51
12.JUN 02-JUN 15	1.05	0.08	0.60	0.41	0.63
13.JUN 16-JUN 29	1.10	1.00	0.76	0.23	0.45
14.JUN 30-JUL 13	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
15.JUL 14-JUL 27	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
16.JUL 28-AUG 10	1.14	0.70	1.08	0.32	0.54
17.AUG 11-AUG 24	1.04	0.90	1.02	0.69	0.91
18.AUG 25-SEP 07	0.85	1.00	0.97	0.74	0.96
19.SEP 08-SEP 21	0.93	0.70	0.96	0.31	0.53
20.SEP 22-OCT 05	0.41	0.60	0.83	NOT AVAIL	0.00
21.OCT 06-OCT 19	1.47	1.30	0.91	0.18	0.40
22.OCT 20-NOV 02	1.10	1.10	1.08	0.38	0.60
23.NOV 03-NOV 16	0.95	1.10	1.09	0.31	0.53
24.NOV 17-NOV 30	0.61	1.00	0.80	0.39	0.61
25.DEC 01-DEC 14	0.81	1.00	0.99	0.22	0.44
26.DEC 15-DEC 28	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
AVERAGE TO DATE	0.99	0.89	0.87	0.54	0.76
RANGE - LOW	0.41	0.08	0.36	0.18	0.40
TO DATE - HIGH	1.60	1.30	1.09	1.96	2.18

SAMPLES ABOVE LIMITS	2
SAMPLES BELOW LIMITS	5
% OUTSIDE LIMITS TO DATE	43.75%
NUMBER OF SAMPLES TO DATE	16

FLUORIDE CONTROL DATA - 1990

LOCATION - SANFORD (R.M. OF MACDONALD)
CHEMICAL - H2SiF6
TEST KIT - Hach DR-100
NATURAL FLUORIDE -

FLUORIDATOR - W & T
OPERATOR - K. Murphy
TELEPHONE - 736-4327
CALCULATION - 44000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.04	1.15	1.16	0.92	0.92
2.JAN 13-JAN 26	0.98	1.11	1.19	0.92	0.92
3.JAN 27-FEB 09	0.94	1.07	1.11	0.83	0.83
4.FEB 10-FEB 23	1.03	1.02	1.07	0.87	0.87
5.FEB 24-MAR 09	1.00	1.08	1.14	0.97	0.97
6.MAR 10-MAR 23	0.95	1.02	1.12	0.90	0.90
7.MAR 24-APR 06	0.93	0.99	1.10	0.87	0.87
8.APR 07-APR 20	1.12	1.13	1.18	1.07	1.07
9.APR 21-MAY 04	0.96	1.06	1.13	0.95	0.95
10.MAY 05-MAY 18	1.12	1.11	1.12	1.07	1.07
11.MAY 19-JUN 01	1.18	1.21	1.20	1.20	1.20
12.JUN 02-JUN 15	1.25	1.21	1.20	1.21	1.21
13.JUN 16-JUN 29	1.28	1.21	1.22	1.06	1.06
14.JUN 30-JUL 13	1.18	1.22	1.22	1.09	1.09
15.JUL 14-JUL 27	1.20	1.20	1.18	1.08	1.08
16.JUL 28-AUG 10	1.16	1.20	1.19	1.01	1.01
17.AUG 11-AUG 24	1.12	1.12	1.10	0.96	0.96
18.AUG 25-SEP 07	0.58	0.58	0.58	0.26	0.26
19.SEP 08-SEP 21	0.18	0.23	0.22	NOT AVAIL	0.00
20.SEP 22-OCT 05	1.15	1.19	1.18	1.16	1.16
21.OCT 06-OCT 19	1.17	1.15	1.16	1.07	1.07
22.OCT 20-NOV 02	1.23	1.19	1.18	1.09	1.09
23.NOV 03-NOV 16	1.18	1.19	1.20	1.12	1.12
24.NOV 17-NOV 30	1.34	1.18	1.17	1.11	1.11
25.DEC 01-DEC 14	1.18	1.17	1.17	1.11	1.11
26.DEC 15-DEC 28	1.18	1.18	1.16	1.08	1.08
AVERAGE TO DATE	1.06	1.08	1.10	1.00	1.00
RANGE - LOW	0.18	0.23	0.22	0.26	0.26
TO DATE - HIGH	1.34	1.22	1.22	1.21	1.21

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	7.69%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - C.F.B. SHILO
CHEMICAL - Saturator 4%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.05

FLUORIDATOR - LMI SAT.
OPERATOR - C. Anderson
TELEPHONE - 765-4723
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.30	1.25	1.20	2.23	2.28
2.JAN 13-JAN 26	1.04	1.16	1.12	2.29	2.34
3.JAN 27-FEB 09	1.29	1.32	1.22	0.53	0.58
4.FEB 10-FEB 23	1.00	1.30	1.15	2.18	2.23
5.FEB 24-MAR 09	0.92	0.82	1.15	2.02	2.07
6.MAR 10-MAR 23	1.32	1.28	1.24	2.23	2.28
7.MAR 24-APR 06	1.70	1.31	1.37	1.94	1.99
8.APR 07-APR 20	1.50	1.41	1.34	2.24	2.29
9.APR 21-MAY 04	1.40	1.48	1.35	1.98	2.03
10.MAY 05-MAY 18	1.47	1.12	1.51	1.95	2.00
11.MAY 19-JUN 01	1.20	1.42	1.09	1.22	1.27
12.JUN 02-JUN 15	1.15	1.00	1.31	1.31	1.36
13.JUN 16-JUN 29	1.15	1.51	1.18	1.94	1.99
14.JUN 30-JUL 13	1.15	1.25	1.14	1.06	1.11
15.JUL 14-JUL 27	1.20	1.24	1.27	1.17	1.22
16.JUL 28-AUG 10	0.66	0.73	0.95	0.97	1.02
17.AUG 11-AUG 24	0.88	0.33	0.82	1.33	1.38
18.AUG 25-SEP 07	1.03	1.01	0.54	1.09	1.14
19.SEP 08-SEP 21	1.00	1.10	0.98	1.41	1.46
20.SEP 22-OCT 05	0.94	0.88	0.86	1.21	1.26
21.OCT 06-OCT 19	1.00	1.15	0.92	1.53	1.58
22.OCT 20-NOV 02	0.95	0.87	0.87	1.40	1.45
23.NOV 03-NOV 16	1.23	0.98	1.00	1.85	1.90
24.NOV 17-NOV 30	0.97	0.97	0.93	1.48	1.53
25.DEC 01-DEC 14	0.97	1.10	0.91	1.72	1.77
26.DEC 15-DEC 28	0.96	1.01	0.94	1.82	1.87
AVERAGE TO DATE	1.13	1.12	1.09	1.62	1.67
RANGE - LOW	0.66	0.33	0.54	0.53	0.58
TO DATE - HIGH	1.70	1.51	1.51	2.29	2.34

SAMPLES ABOVE LIMITS	3
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	19.23%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - SHOAL LAKE
CHEMICAL - NaF 4%
TEST KIT - Hach DR-3
NATURAL FLUORIDE 0.27

FLUORIDATOR -W&T Saturator
OPERATOR - J.W. Michasiw
TELEPHONE - 759-2522
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.95	1.01	1.07	0.74	1.01
2.JAN 13-JAN 26	1.04	1.05	1.06	0.89	1.16
3.JAN 27-FEB 09	1.11	1.03	0.90	0.73	1.00
4.FEB 10-FEB 23	1.08	1.14	1.11	0.94	1.21
5.FEB 24-MAR 09	1.05	1.08	0.95	0.82	1.09
6.MAR 10-MAR 23	1.04	1.10	1.09	1.04	1.31
7.MAR 24-APR 06	1.14	1.03	0.92	0.80	1.07
8.APR 07-APR 20	1.00	1.01	1.05	0.66	0.93
9.APR 21-MAY 04	1.00	1.01	1.05	1.02	1.29
10.MAY 05-MAY 18	1.00	1.03	1.05	0.92	1.19
11.MAY 19-JUN 01	0.87	1.03	1.04	0.91	1.18
12.JUN 02-JUN 15	0.77	1.02	1.03	1.01	1.28
13.JUN 16-JUN 29	0.78	1.00	1.02	0.79	1.06
14.JUN 30-JUL 13	0.93	1.00	1.03	0.72	0.99
15.JUL 14-JUL 27	0.94	1.00	1.03	0.73	1.00
16.JUL 28-AUG 10	0.85	1.01	1.04	0.92	1.19
17.AUG 11-AUG 24	1.00	1.01	1.15	1.01	1.28
18.AUG 25-SEP 07	0.80	1.00	0.99	0.78	1.05
19.SEP 08-SEP 21	0.90	1.01	1.00	0.81	1.08
20.SEP 22-OCT 05	0.92	0.99	1.04	0.68	0.95
21.OCT 06-OCT 19	0.88	0.99	0.97	0.73	1.00
22.OCT 20-NOV 02	0.84	0.96	0.84	0.72	0.99
23.NOV 03-NOV 16	0.84	0.90	0.99	0.61	0.88
24.NOV 17-NOV 30	0.85	0.90	0.94	0.61	0.88
25.DEC 01-DEC 14	0.99	0.94	0.93	0.71	0.98
26.DEC 15-DEC 28	0.96	0.91	0.87	0.83	1.10
AVERAGE TO DATE	0.94	1.01	1.01	0.81	1.08
RANGE - LOW	0.77	0.90	0.84	0.61	0.88
TO DATE - HIGH	1.14	1.14	1.15	1.04	1.31

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	9
% OUTSIDE LIMITS TO DATE	34.62%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - SOURIS
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.19

FLUORIDATOR - LMI A751
OPERATOR - W.J. Zander
TELEPHONE - 483-3096
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.95	1.10	1.27	1.04	1.23
2.JAN 13-JAN 26	1.04	1.30	1.25	1.07	1.26
3.JAN 27-FEB 09	1.11	1.15	1.29	1.05	1.24
4.FEB 10-FEB 23	1.00	1.15	1.28	1.00	1.19
5.FEB 24-MAR 09	1.00	1.40	1.22	0.87	1.06
6.MAR 10-MAR 23	1.15	1.00	1.16	0.98	1.17
7.MAR 24-APR 06	1.24	1.28	1.26	0.97	1.16
8.APR 07-APR 20	1.03	1.20	1.18	0.89	1.08
9.APR 21-MAY 04	1.20	1.30	1.24	0.87	1.06
10.MAY 05-MAY 18	1.10	1.26	1.20	0.96	1.15
11.MAY 19-JUN 01	0.94	1.00	1.07	1.01	1.20
12.JUN 02-JUN 15	0.91	NOT AVAIL	1.12	0.53	0.72
13.JUN 16-JUN 29	0.96	1.05	1.08	0.80	0.99
14.JUN 30-JUL 13	1.07	1.10	1.23	0.79	0.98
15.JUL 14-JUL 27	1.10	1.19	1.22	1.00	1.19
16.JUL 28-AUG 10	1.20	1.19	1.03	1.03	1.22
17.AUG 11-AUG 24	1.50	1.52	0.87	1.58	1.77
18.AUG 25-SEP 07	1.18	1.18	1.28	1.00	1.19
19.SEP 08-SEP 21	0.87	0.84	1.09	0.98	1.17
20.SEP 22-OCT 05	1.15	1.22	1.31	1.22	1.41
21.OCT 06-OCT 19	1.03	1.30	1.24	0.94	1.13
22.OCT 20-NOV 02	0.88	1.05	1.25	1.00	1.19
23.NOV 03-NOV 16	1.00	1.08	1.23	0.99	1.18
24.NOV 17-NOV 30	0.97	1.06	1.13	0.90	1.09
25.DEC 01-DEC 14	0.97	1.05	1.19	0.91	1.10
26.DEC 15-DEC 28	1.00	1.30	1.21	0.86	1.05
AVERAGE TO DATE	1.06	1.17	1.19	0.97	1.16
RANGE - LOW	0.87	0.84	0.87	0.53	0.72
TO DATE - HIGH	1.50	1.52	1.31	1.58	1.77

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	2
% OUTSIDE LIMITS TO DATE	11.54%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - STEINBACH
CHEMICAL - NaF
TEST KIT - Hach DR-100
NATURAL FLUORIDE - 0.39

FLUORIDATOR - W&T
OPERATOR - Don Doyle
TELEPHONE - 326-3208
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.15	0.97	0.98	0.78	1.17
2.JAN 13-JAN 26	1.00	0.82	0.82	0.57	0.96
3.JAN 27-FEB 09	1.00	1.01	1.01	0.66	1.05
4.FEB 10-FEB 23	0.92	1.08	1.08	0.58	0.97
5.FEB 24-MAR 09	1.07	1.02	1.02	0.79	1.18
6.MAR 10-MAR 23	0.97	0.98	0.98	0.64	1.03
7.MAR 24-APR 06	0.91	1.01	1.01	NOT AVAIL	0.00
8.APR 07-APR 20	0.91	0.99	1.00	0.66	1.05
9.APR 21-MAY 04	0.97	0.97	0.97	0.59	0.98
10.MAY 05-MAY 18	1.03	1.04	1.05	0.55	0.94
11.MAY 19-JUN 01	1.03	1.09	1.09	0.55	0.94
12.JUN 02-JUN 15	1.10	1.19	1.20	0.72	1.11
13.JUN 16-JUN 29	1.05	1.17	1.17	0.60	0.99
14.JUN 30-JUL 13	0.88	1.12	1.13	0.65	1.04
15.JUL 14-JUL 27	0.84	0.99	0.99	0.54	0.93
16.JUL 28-AUG 10	0.91	1.00	1.01	0.48	0.87
17.AUG 11-AUG 24	0.88	1.01	1.01	0.57	0.96
18.AUG 25-SEP 07	1.03	1.04	1.04	0.62	1.01
19.SEP 08-SEP 21	1.00	1.02	1.02	0.61	1.00
20.SEP 22-OCT 05	1.08	1.07	1.07	0.64	1.03
21.OCT 06-OCT 19	1.00	1.00	1.00	0.49	0.88
22.OCT 20-NOV 02	1.19	1.06	1.07	0.69	1.08
23.NOV 03-NOV 16	1.04			NOT AVAIL	0.00
24.NOV 17-NOV 30	0.67	0.73	0.73	0.28	0.67
25.DEC 01-DEC 14	0.68	0.78	0.79	0.24	0.63
26.DEC 15-DEC 28	0.72	0.93	0.93	0.25	0.64
AVERAGE TO DATE	0.96	1.00	1.01	0.57	0.96
RANGE - LOW	0.67	0.73	0.73	0.24	0.63
TO DATE - HIGH	1.19	1.19	1.20	0.79	1.18
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	6				
% OUTSIDE LIMITS TO DATE	23.08%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - SWAN RIVER
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.18

FLUORIDATOR -W&T 44-222
OPERATOR - L. Lemon
OPERATOR - M. Phillips
TELEPHONE - 734-4628
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.04	1.10	1.11	0.00	0.18
2.JAN 13-JAN 26	1.16	1.25	1.24	0.00	0.18
3.JAN 27-FEB 09	1.30	1.35	1.34	0.00	0.18
4.FEB 10-FEB 23	1.45	1.40	1.50	0.00	0.18
5.FEB 24-MAR 09	1.05	1.10	1.11	0.00	0.18
6.MAR 10-MAR 23	1.11	1.15	1.15	0.00	0.18
7.MAR 24-APR 06	0.91	1.10	1.10	0.00	0.18
8.APR 07-APR 20	0.98	1.10	1.10	0.00	0.18
9.APR 21-MAY 04	1.05	1.10	1.02	0.00	0.18
10.MAY 05-MAY 18	1.00	1.10	1.09	0.00	0.18
11.MAY 19-JUN 01	1.03	1.20	1.19	0.00	0.18
12.JUN 02-JUN 15	0.93	NOT AVAIL	1.25	0.00	0.18
13.JUN 16-JUN 29	1.00	1.10	1.09	0.00	0.18
14.JUN 30-JUL 13	1.11	1.20	1.19	0.00	0.18
15.JUL 14-JUL 27	1.15	1.20	1.19	0.00	0.18
16.JUL 28-AUG 10	1.15	1.20	1.14	0.00	0.18
17.AUG 11-AUG 24	1.26	1.20	1.16	0.00	0.18
18.AUG 25-SEP 07	1.34	1.30	1.30	0.00	0.18
19.SEP 08-SEP 21	1.25	NOT AVAIL	1.20	0.00	0.18
20.SEP 22-OCT 05	0.92	1.25	1.25	0.00	0.18
21.OCT 06-OCT 19	1.43	1.50	1.31	0.00	0.18
22.OCT 20-NOV 02	1.05	1.20	1.20	0.00	0.18
23.NOV 03-NOV 16	1.30	1.23	1.30	0.00	0.18
24.NOV 17-NOV 30	0.89	1.15	1.18	NOT AVAIL	0.00
25.DEC 01-DEC 14	1.05	1.05	1.08	0.00	0.18
26.DEC 15-DEC 28	1.30	1.25	1.22	0.00	0.18
AVERAGE TO DATE	1.12	1.20	1.19	ERR	0.18
RANGE - LOW	0.89	1.05	1.02	ERR	0.18
TO DATE - HIGH	1.45	1.50	1.50	ERR	0.18
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	1				
% OUTSIDE LIMITS TO DATE	3.85%				
NUMBER OF SAMPLES TO DATE	26				

FLUORIDE CONTROL DATA - 1990

LOCATION - THE PAS
CHEMICAL - Na2SiF6 (Dry)
TEST KIT - Hach Dr/1 Colormeter/PH Meter
NATURAL FLUORIDE 0.15

FLUORIDATOR -W&T 32-050
OPERATOR - Russ Yachiw
TELEPHONE - 623-6338
CALCULATION - 60000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.20	1.20	1.14	1.60	1.75
2.JAN 13-JAN 26	1.23	1.25	1.25	1.35	1.50
3.JAN 27-FEB 09	1.15	1.28	1.26	1.11	1.26
4.FEB 10-FEB 23	1.25	1.26	1.24	1.00	1.15
5.FEB 24-MAR 09	1.16	1.30	1.28	1.06	1.21
6.MAR 10-MAR 23	1.30	1.30	1.30	1.11	1.26
7.MAR 24-APR 06	1.28	1.22	1.25	1.06	1.21
8.APR 07-APR 20	1.40	1.40	1.40	1.22	1.37
9.APR 21-MAY 04	1.35	1.30	1.32	1.19	1.34
10.MAY 05-MAY 18	1.25	1.25	1.25	1.11	1.26
11.MAY 19-JUN 01	1.25	1.30	1.27	1.34	1.49
12.JUN 02-JUN 15	1.34	1.25	1.28	1.60	1.75
13.JUN 16-JUN 29	1.40	1.35	1.37	1.77	1.92
14.JUN 30-JUL 13	1.03	1.10	1.11	1.75	1.90
15.JUL 14-JUL 27	1.06	1.18	1.16	1.22	1.37
16.JUL 28-AUG 10	1.30	1.50	1.41	1.68	1.83
17.AUG 11-AUG 24	1.07	1.22	1.20	1.24	1.39
18.AUG 25-SEP 07	1.14	1.13	1.17	1.17	1.32
19.SEP 08-SEP 21	1.06	1.12	1.13	1.28	1.43
20.SEP 22-OCT 05	1.25	1.21	1.22	1.51	1.66
21.OCT 06-OCT 19	1.25	1.26	1.25	1.62	1.77
22.OCT 20-NOV 02	1.30	1.22	1.21	1.72	1.87
23.NOV 03-NOV 16	1.20	1.22	1.22	1.54	1.69
24.NOV 17-NOV 30	1.15	1.10	1.12	1.63	1.78
25.DEC 01-DEC 14	NOT AVAIL	1.15	1.15	1.73	1.88
26.DEC 15-DEC 28	1.20	1.10	1.13	1.56	1.71
AVERAGE TO DATE	1.22	1.24	1.23	1.39	1.54
RANGE - LOW	1.03	1.10	1.11	1.00	1.15
TO DATE - HIGH	1.40	1.50	1.41	1.77	1.92

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	25

FLUORIDE CONTROL DATA - 1990

LOCATION - TREHERNE
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.32

FLUORIDATOR -W&T A-745
OPERATOR - G. Clarke
TELEPHONE - 723-2044
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.95	NOT AVAIL	1.19	NOT AVAIL	0.00
2.JAN 13-JAN 26	1.63	1.15	1.20	NOT AVAIL	0.00
3.JAN 27-FEB 09	1.20	NOT AVAIL	1.21	0.99	1.31
4.FEB 10-FEB 23	1.10	1.20	1.21	1.07	1.39
5.FEB 24-MAR 09	1.15	1.15	1.20	0.94	1.26
6.MAR 10-MAR 23	1.17	1.20	1.44	1.13	1.45
7.MAR 24-APR 06	1.10	1.20	0.59	NOT AVAIL	0.00
8.APR 07-APR 20	1.27	1.30	1.26	NOT AVAIL	0.00
9.APR 21-MAY 04	1.26	1.25	1.21	1.27	1.59
10.MAY 05-MAY 18	1.19	1.40	1.23	1.21	1.53
11.MAY 19-JUN 01	1.30	1.30	1.32	0.77	1.09
12.JUN 02-JUN 15	1.10	1.20	1.11	1.21	1.53
13.JUN 16-JUN 29	1.17	1.25	1.17	0.99	1.31
14.JUN 30-JUL 13	1.22	1.30	1.18	0.89	1.21
15.JUL 14-JUL 27	1.06	1.15	1.24	1.38	1.70
16.JUL 28-AUG 10	1.09	1.20	1.18	0.85	1.17
17.AUG 11-AUG 24	0.87	NOT AVAIL	1.00	1.04	1.36
18.AUG 25-SEP 07	1.15	1.05	1.15	1.13	1.45
19.SEP 08-SEP 21	1.27	1.20	1.16	1.09	1.41
20.SEP 22-OCT 05	1.15	1.10	1.23	1.04	1.36
21.OCT 06-OCT 19	1.14	1.15	1.13	1.06	1.38
22.OCT 20-NOV 02	1.24	1.27	1.26	1.01	1.33
23.NOV 03-NOV 16	1.23	1.15	1.21	1.11	1.43
24.NOV 17-NOV 30	1.29	1.20	1.18	0.99	1.31
25.DEC 01-DEC 14	1.25	1.10	1.19	1.24	1.56
26.DEC 15-DEC 28	1.25	1.08	1.08	1.14	1.46
AVERAGE TO DATE	1.18	1.20	1.17	1.07	1.39
RANGE - LOW	0.87	1.05	0.59	0.77	1.09
TO DATE - HIGH	1.63	1.40	1.44	1.38	1.70

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	1
% OUTSIDE LIMITS TO DATE	7.69%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - VIRDEN
CHEMICAL - NaF 4%
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.44

FLUORIDATOR - LMI A751
OPERATOR - Dave Penny
TELEPHONE - 748-3074
CALCULATION - 17600

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.00	1.15	1.15	0.60	1.04
2.JAN 13-JAN 26	0.80	1.05	1.05	0.46	0.90
3.JAN 27-FEB 09	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
4.FEB 10-FEB 23	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
5.FEB 24-MAR 09	NOT AVAIL	NOT AVAIL	0.00	NOT AVAIL	0.00
6.MAR 10-MAR 23	1.05	1.14	1.14	1.06	1.50
7.MAR 24-APR 06	1.04	1.09	1.09	0.87	1.31
8.APR 07-APR 20	1.06	1.19	1.19	0.78	1.22
9.APR 21-MAY 04	1.04	1.10	1.17	0.92	1.36
10.MAY 05-MAY 18	1.31	1.30	1.19	1.68	2.12
11.MAY 19-JUN 01	1.36	1.35	1.35	1.16	1.60
12.JUN 02-JUN 15	1.45	1.32	1.40	1.13	1.57
13.JUN 16-JUN 29	1.45	1.46	1.46	1.20	1.64
14.JUN 30-JUL 13	1.50	1.20	1.32	1.02	1.46
15.JUL 14-JUL 27	1.25	1.19	1.19	1.02	1.46
16.JUL 28-AUG 10	1.46	1.33	1.43	0.99	1.43
17.AUG 11-AUG 24	0.91	1.09	1.09	0.97	1.41
18.AUG 25-SEP 07	1.00	1.15	1.12	1.42	1.86
19.SEP 08-SEP 21	1.15	1.05	1.05	1.07	1.51
20.SEP 22-OCT 05	1.09	1.12	1.12	1.21	1.65
21.OCT 06-OCT 19	1.25	1.27	1.27	1.15	1.59
22.OCT 20-NOV 02	1.50	1.43	1.43	1.17	1.61
23.NOV 03-NOV 16	1.57	1.46	1.46	1.19	1.63
24.NOV 17-NOV 30	1.25	1.19	1.19	1.17	1.61
25.DEC 01-DEC 14	1.43	1.40	1.40	1.03	1.47
26.DEC 15-DEC 28	1.45	1.33	1.33	0.99	1.43
AVERAGE TO DATE	1.23	1.23	1.24	1.05	1.49
RANGE - LOW	0.80	1.05	1.05	0.46	0.90
TO DATE - HIGH	1.57	1.46	1.46	1.68	2.12

SAMPLES ABOVE LIMITS	4
SAMPLES BELOW LIMITS	1
% OUTSIDE LIMITS TO DATE	21.74%
NUMBER OF SAMPLES TO DATE	23

FLUORIDE CONTROL DATA - 1990

LOCATION - WABOWDEN
CHEMICAL - NaF
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.10

FLUORIDATOR - LMI SAT.
OPERATOR - Jack McIvor
TELEPHONE - 689-2223
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.53	NOT AVAIL	1.16	1.03	1.13
2.JAN 13-JAN 26	0.63	1.17	1.17	0.95	1.05
3.JAN 27-FEB 09	1.70	1.20	1.19	0.28	0.38
4.FEB 10-FEB 23	1.14	1.15	1.15	1.35	1.45
5.FEB 24-MAR 09	1.32	1.17	0.76	1.53	1.63
6.MAR 10-MAR 23	1.45	1.30	1.19	0.31	0.41
7.MAR 24-APR 06	1.37	1.30	1.21	NOT AVAIL	0.00
8.APR 07-APR 20	0.60	0.63	1.05	1.62	1.72
9.APR 21-MAY 04	1.15	1.12	1.04	2.13	2.23
10.MAY 05-MAY 18	0.87	1.01	1.10	1.24	1.34
11.MAY 19-JUN 01	1.00	1.10	0.89	0.22	0.32
12.JUN 02-JUN 15	1.35	1.21	1.17	0.26	0.36
13.JUN 16-JUN 29	1.15	1.14	1.00	0.21	0.31
14.JUN 30-JUL 13	1.00	1.10	1.13	0.18	0.28
15.JUL 14-JUL 27	0.85	1.10	0.78	0.94	1.04
16.JUL 28-AUG 10	1.10	1.12	1.11	1.16	1.26
17.AUG 11-AUG 24	1.14	1.14	1.20	0.81	0.91
18.AUG 25-SEP 07	0.83	1.12	1.05	1.34	1.44
19.SEP 08-SEP 21	0.90	1.01	1.06	1.31	1.41
20.SEP 22-OCT 05	0.42	2.00	0.96	0.21	0.31
21.OCT 06-OCT 19	0.97	0.92	0.67	0.80	0.90
22.OCT 20-NOV 02	0.97	1.38	0.96	1.68	1.78
23.NOV 03-NOV 16	0.61	0.72	0.80	2.94	3.04
24.NOV 17-NOV 30	0.96	0.84	0.75	1.92	2.02
25.DEC 01-DEC 14	0.92	0.89	0.96	2.88	2.98
26.DEC 15-DEC 28	1.35	1.24	1.10	2.23	2.33
AVERAGE TO DATE	1.01	1.12	1.02	1.18	1.28
RANGE - LOW	0.42	0.63	0.67	0.18	0.28
TO DATE - HIGH	1.70	2.00	1.21	2.94	3.04

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	8
% OUTSIDE LIMITS TO DATE	34.62%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - WINKLER
CHEMICAL - NaF 3%
TEST KIT - Hach Spectrophotometer
NATURAL FLUORIDE 0.26
ASSISTED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR -W7T A-747
OPERATOR - Lou Loewen
TELEPHONE - 325-8711
CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.10	1.23	1.23	0.89	1.15
2.JAN 13-JAN 26	1.16	1.21	1.19	0.89	1.15
3.JAN 27-FEB 09	1.40	1.30	1.26	1.15	1.41
4.FEB 10-FEB 23	1.05	1.10	1.09	0.81	1.07
5.FEB 24-MAR 09	1.14	1.19	1.10	0.91	1.17
6.MAR 10-MAR 23	1.21	1.25	1.20	0.93	1.19
7.MAR 24-APR 06	1.15	1.17	1.20	0.86	1.12
8.APR 07-APR 20	1.07	1.18	1.17	0.82	1.08
9.APR 21-MAY 04	1.10	1.22	1.20	0.86	1.12
10.MAY 05-MAY 18	1.05	1.17	1.14	0.84	1.10
11.MAY 19-JUN 01	1.25	1.29	1.23	0.90	1.16
12.JUN 02-JUN 15	1.10	1.17	1.18	0.73	0.99
13.JUN 16-JUN 29	1.25	1.22	1.22	0.84	1.10
14.JUN 30-JUL 13	1.25	1.25	1.22	NOT AVAIL	0.00
15.JUL 14-JUL 27	1.06	1.24	1.21	0.84	1.10
16.JUL 28-AUG 10	1.10	1.15	1.20	0.83	1.09
17.AUG 11-AUG 24	0.96	1.12	1.11	0.78	1.04
18.AUG 25-SEP 07	1.05	1.16	1.17	0.82	1.08
19.SEP 08-SEP 21	1.05	1.14	1.15	0.79	1.05
20.SEP 22-OCT 05	1.05	1.17	1.16	0.79	1.05
21.OCT 06-OCT 19	1.07	1.18	1.16	0.84	1.10
22.OCT 20-NOV 02	1.12	1.20	1.19	0.92	1.18
23.NOV 03-NOV 16	1.13	1.18	1.18	0.64	0.90
24.NOV 17-NOV 30	1.11	1.15	1.17	0.78	1.04
25.DEC 01-DEC 14	1.05	1.18	1.16	0.79	1.05
26.DEC 15-DEC 28	1.24	1.31	1.05	0.81	1.07
AVERAGE TO DATE	1.13	1.20	1.17	0.84	1.10
RANGE - LOW	0.96	1.10	1.05	0.64	0.90
TO DATE - HIGH	1.40	1.31	1.26	1.15	1.41

SAMPLES ABOVE LIMITS	0
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	0.00%
NUMBER OF SAMPLES TO DATE	26

FLUORIDE CONTROL DATA - 1990

LOCATION - WINNIPEG
CHEMICAL - NaSiF6 25%
TEST KIT - Specific Ion Electrode
NATURAL FLUORIDE 0.1

FLUORIDATOR -W&T
OPERATOR - T. Hutchinson
TELEPHONE - 986-4784
CALCULATION - 0.2054

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	0.10				
2.JAN 13-JAN 26	0.10				
3.JAN 27-FEB 09	0.10				
4.FEB 10-FEB 23	0.10				
5.FEB 24-MAR 09	0.10				
6.MAR 10-MAR 23	0.29				
7.MAR 24-APR 06	0.72				
8.APR 07-APR 20	1.05				
9.APR 21-MAY 04	1.00				
10.MAY 05-MAY 18	1.05				
11.MAY 19-JUN 01	1.07				
12.JUN 02-JUN 15	0.65				
13.JUN 16-JUN 29	0.55				
14.JUN 30-JUL 13	0.84				
15.JUL 14-JUL 27	0.75				
16.JUL 28-AUG 10	0.43				
17.AUG 11-AUG 24	0.12				
18.AUG 25-SEP 07	0.10				
19.SEP 08-SEP 21	0.10				
20.SEP 22-OCT 05	0.12				
21.OCT 06-OCT 19	0.10				
22.OCT 20-NOV 02	0.11				
23.NOV 03-NOV 16	0.10				
24.NOV 17-NOV 30	0.10				
25.DEC 01-DEC 14	0.10				
26.DEC 15-DEC 28	0.10				
AVERAGE TO DATE	0.38	ERR	ERR	ERR	ERR
RANGE - LOW	0.10	ERR	ERR	ERR	ERR
TO DATE - HIGH	1.07	ERR	ERR	ERR	ERR
SAMPLES ABOVE LIMITS	0				
SAMPLES BELOW LIMITS	22				
% OUTSIDE LIMITS TO DATE	84.62%				
NUMBER OF SAMPLES TO DATE	26				

NOTE: Winnipeg's plant experienced mechanical problems throughout 1990. A major redesign of the plant was undertaken and is expected to be operational by early 1991.

FLUORIDE CONTROL DATA - 1990

LOCATION - WINNIPEGOSIS
CHEMICAL - NaF
TEST KIT - Hach DR-100
NATURAL FLUORIDE 0.15
OPERATED BY: MANITOBA WATER SERVICES BOARD

FLUORIDATOR - LMI SAT.
OPERATOR - Ron Pascal
TELEPHONE - 656-4345
CALCULATION - 18000

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.DEC 30-JAN 12	1.14	1.25	1.27	0.62	0.77
2.JAN 13-JAN 26	1.13	1.22	1.28	0.78	0.93
3.JAN 27-FEB 09	1.20	1.25	1.30	1.56	1.71
4.FEB 10-FEB 23	1.22	1.33	1.32	0.85	1.00
5.FEB 24-MAR 09	1.26	1.29	1.35	1.20	1.35
6.MAR 10-MAR 23	1.07	1.16	1.27	0.41	0.56
7.MAR 24-APR 06	1.24	1.16	1.28	1.25	1.40
8.APR 07-APR 20	1.15	1.28	1.26	0.72	0.87
9.APR 21-MAY 04	1.20	1.26	1.33	1.32	1.47
10.MAY 05-MAY 18	1.26	1.11	1.25	0.80	0.95
11.MAY 19-JUN 01	1.41	1.22	1.30	0.90	1.05
12.JUN 02-JUN 15	1.48	1.26	1.32	1.58	1.73
13.JUN 16-JUN 29	1.40	1.22	1.27	0.92	1.07
14.JUN 30-JUL 13	1.30	1.28	1.29	1.19	1.34
15.JUL 14-JUL 27	1.16	1.21	1.25	1.15	1.30
16.JUL 28-AUG 10	1.38	1.28	1.30	1.11	1.26
17.AUG 11-AUG 24	1.39	1.32	1.32	1.74	1.89
18.AUG 25-SEP 07	1.35	1.29	1.27	1.21	1.36
19.SEP 08-SEP 21	1.25	1.28	1.23	0.83	0.98
20.SEP 22-OCT 05	1.27	1.17	1.18	0.40	0.55
21.OCT 06-OCT 19	1.40	1.36	1.26	1.24	1.39
22.OCT 20-NOV 02	1.05	0.92	0.99	0.67	0.82
23.NOV 03-NOV 16	1.10	1.01	1.07	0.53	0.68
24.NOV 17-NOV 30	1.10	1.09	1.08	1.24	1.39
25.DEC 01-DEC 14	0.93	1.10	0.95	1.59	1.74
26.DEC 15-DEC 28	1.00	1.08	0.90	0.80	0.95
AVERAGE TO DATE	1.22	1.21	1.23	1.02	1.17
RANGE - LOW	0.93	0.92	0.90	0.40	0.55
TO DATE - HIGH	1.48	1.36	1.35	1.74	1.89

SAMPLES ABOVE LIMITS	1
SAMPLES BELOW LIMITS	0
% OUTSIDE LIMITS TO DATE	3.85%
NUMBER OF SAMPLES TO DATE	26